MODELS | SJ 6832E

Service Manual

SJIII Conventional E Series (ANSI/CSA & CE)

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SKYJACK

This manual is based on Serial Number(s):

SJIII 6832E 80,000,128 & Above

Please refer to the website (www.skyjack.com) for older Serial Numbers.

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SJIII Conventional E Series
Service Manual

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The Safety Alert Symbol identifies important safety messages on aerial platforms, safety signs in manuals or elsewhere. When you see this symbol, be alert to the possibility of personal injury or death. Follow the instructions in the safety message.

This Safety Alert Symbol means attention!

Become alert! Your safety is involved.

DANGER

DANGER indicates an imminently hazardous situation which, if not avoided, will result in death or serious injury.

WARNING

WARNING indicates a potentially hazardous situation which, if not avoided, could result in death or serious injury.

CAUTION

CAUTION indicates a potentially hazardous situation which, if not avoided, may result in minor or moderate injury. It may also be used to alert against unsafe practices.

IMPORTANT

IMPORTANT indicates a procedure) essential for safe operation and which, if not followed, may result in a malfunction or damage to the aerial platform.

Section 1
SCHEDULE MAINTENANCE INSPECTIONS

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SKYJACK is continuously improving and expanding product features on its equipment, therefore, specifications and dimensions are subject to change without notice.

Aerial Platform and Mobile Elevating Work Platform Definition

A mobile device that has an adjustable position platform supported from ground level by a structure.

Purpose of Equipment

The SKYJACK SJIII Compact and Conventional series aerial platforms are designed to transport and raise personnel, tools and materials to overhead work areas.

Use of Equipment

The aerial platform is a highly maneuverable, mobile work station. Lifting and driving must be on a flat, level, compacted surface. It can be driven over uneven terrain only when the platform is fully lowered.

Manuals

Operating

The operating manual is considered a fundamental part of the aerial platform. It is a very important way to communicate necessary safety information to users and operators. A complete and legible copy of this manual must be kept in the provided weather-resistant storage compartment on the aerial platform at all times.

Service & Maintenance

The purpose of this is to provide the customer with the servicing and maintenance procedures essential for the promotion of proper machine operation for its intended purpose.

All information in this manual should be read and understood before any attempt is made to service the machine. The updated copy of the manuals are found on the company's website: www.skyjack.com.

Operator

The operator must read and completely understand both this operating manual and the safety panel label located on the platform and all other warnings in this manual and on the aerial platform. Compare the labels on the aerial platform with the labels found within this manual. If any labels are damaged or missing, replace them immediately.

Service Policy and Warranty

SKYJACK warrants each new SJIII Series work platform to be free of defective parts and workmanship for the first 24 months. Any defective part will be replaced or repaired by your local SKYJACK dealer at no charge for parts or labor. Contact the SKYJACK Service Department for warranty statement extensions or exclusions.

Optional Accessories

The SKYJACK aerial platform is designed to accept a variety of optional accessories. These are listed under "Standard and Optional Features" in Table 2.1 of the operating manual. Operating instructions for these options (if equipped) are located in section 2 of the operating manual.

For non-standard components or systems, contact the SKYJACK Service Department at

☎ : 44-1691-676-235
🖷 : 44-1691-676-238

Include the model and serial number for each applicable aerial platform.

Scope of this Manual

a. This manual applies to the ANSI, CSA & CE version of the SJIII Series aerial platform models listed on Table 2.1.

- **Equipment identified** with "ANSI" meets the ANSI SIA-A92.6-2006 standard.
- **Equipment identified** with "CSA" meets the CSA B354.2-01 standard.
- **Equipment identified** with "CE" meets the requirements for the European countries, i.e., Machinery Directive 2006/42/EC and Directive 2004/108/EC and the corresponding EN standards.

b. **CSA (Canada) and CE (Europe)**
Operators are required to conform to national, territorial/provincial and local health and safety regulations applicable to the operation of this aerial platform.

c. **ANSI/SIA (United States)**
Operators are required by the current ANSI/SIA A92.6 standards to read and understand their responsibilities in the manual of responsibilities before they use or operate this aerial platform.

WARNING

Failure to comply with your required responsibilities in the use and operation of the aerial platform could result in death or serious injury!

Operator Safety Reminders

A study conducted by St. Paul Travelers showed that most accidents are caused by the failure of the operator to follow simple and fundamental safety rules and precautions.

You, as a careful operator, are the best insurance against an accident. Therefore, proper usage of this aerial platform is mandatory. The following pages of this manual should be read and understood completely before operating the aerial platform.

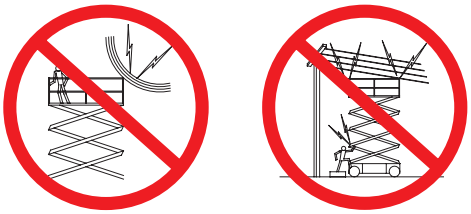
Common sense dictates the use of protective clothing when working on or near machinery. Use appropriate safety devices to protect your eyes, ears, hands, feet and body.

Any modifications from the original design are strictly forbidden without written permission from SKYJACK Inc.

Electrocution Hazard

This aerial platform is not electrically insulated. Maintain a Minimum Safe Approach Distance (MSAD) from energized power lines and parts as listed below. The operator must allow for the platform to sway, rock or sag. This aerial platform does not provide protection from contact with or proximity to an electrically charged conductor.

DO NOT USE AERIAL PLATFORM AS A GROUND FOR WELDING.
DO NOT OPERATE AERIAL PLATFORM DURING LIGHTNING OR STORMS.



DANGER
Avoid Power Lines

Minimum Safe Approach Distance

ANSI/SIA A92.6-2006 and CSA B354.2-01 Requirements		CE Guidance Note "Avoidance of danger from overhead lines"
Voltage Range (Phase to Phase)	**Minimum Safe Approach Distance (Feet)**	**Adhere strictly to the governmental rulings and regulations applicable in your country.**
0 to 300V	Avoid Contact	
Over 300V to 50KV	10	
Over 50KV to 200KV	15	
Over 200KV to 350KV	20	
Over 350KV to 500KV	25	
Over 500KV to 750KV	35	
Over 750KV to 1000KV	45	

FAILURE TO AVOID THIS HAZARD WILL RESULT IN DEATH OR SERIOUS INJURY!

60023AD

Safety Precautions

Know and understand the safety precautions before going on to next section.

WARNING

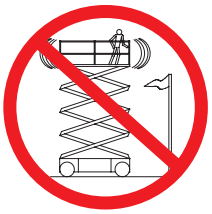
Failure to heed the following safety precautions could result in tip over, falling, crushing, or other hazards leading to death or serious injury.

- **KNOW** all national, state or territorial/provincial and local rules which apply to your aerial platform and jobsite.
- **TURN** emergency main power disconnect switch "◯" off when leaving the aerial platform unattended. Remove the key to prevent unauthorized use of the aerial platform.
- **WEAR** all the protective clothing and personal safety devices issued to you or called for by job conditions.
- **DO NOT** wear loose clothing, dangling neckties, scarves, rings, wristwatches or other jewelry while operating this lift.

- **AVOID** entanglement with ropes, cords or hoses.

- **AVOID** falling. Stay within the boundaries of the guardrails.

- **DO NOT** raise the aerial platform in windy or gusty conditions.

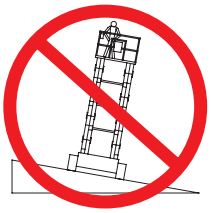


- **DO NOT** increase the lateral surface area of the platform. Increasing the area exposed to the wind will decrease aerial platform stability.

- **DO NOT** drive or elevate the aerial platform if it is not on a firm level surface. Do not drive elevated near depressions or holes of any type, loading docks, debris, drop-offs and surfaces that may affect the stability of the aerial platform.

- **If operation in areas with holes or drop-offs is absolutely necessary,** elevated driving shall not be allowed. Position the aerial platform horizontally only with the platform fully lowered. After ensuring that all 4 wheels or outriggers (if equipped) have contact with level firm surface, the aerial platform can be elevated. After elevation, the drive function must not be activated.

- **Elevated driving** must only be done on a firm level surface.



- **DO NOT** ascend or descend a grade when elevated. When fully lowered, ascending or descending, only grades up to rated maximum listed in Table 2-3 are permissible.

Safety Precautions (Continued)

Know and understand the safety precautions before going on to next section.

- **DO NOT** operate on surfaces not capable of holding the weight of the aerial platform including the rated load, e.g. covers, drains, and trenches.
- **DO NOT** operate an aerial platform that has ladders, scaffolding or other devices mounted on it to increase its size or work height. It is prohibited.

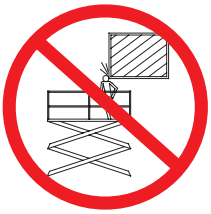
- **DO NOT** exert side forces on aerial platform while elevated.

- **DO NOT** use the aerial platform as a crane. It is prohibited.

- **DO NOT** sit, stand or climb on the guardrails. It is prohibited.

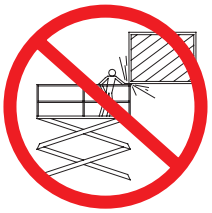
- **DO NOT** climb on scissor arm assembly. It is prohibited.

- **BE AWARE** of overhead obstructions or other possible hazards around the aerial platform when driving or lifting.

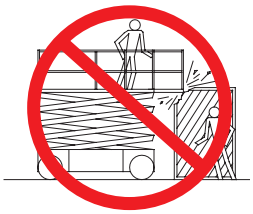


- **DO NOT** raise the aerial platform while the aerial platform is on a truck, fork lift or other device or vehicle.

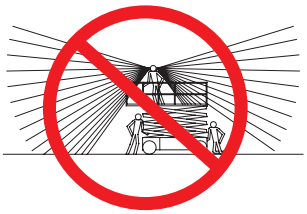
- **BE AWARE** of crushing hazards. Keep all body parts inside platform guardrail.



- **DO NOT** lower the platform unless the area below is clear of personnel and obstructions.



- **ENSURE** that there are no personnel or obstructions in the path of travel, including blind spots.



- **BE AWARE** of blind spots when operating the aerial platform.
- **STUNT** driving and horseplay are prohibited.
- **ENSURE ALL** tires are in good condition and lug nuts are properly tightened.
- **DO NOT** alter or disable limit switches or other safety devices.
- **DO NOT** use the aerial platform without guardrails, locking pins and the entry gate in place.

Safety Precautions (Continued)

Know and understand the safety precautions before going on to next section.

- **DO NOT** exceed the rated capacity of the aerial platform. Do make sure the load is evenly distributed on the platform.
- **DO NOT** attempt to free a snagged platform with lower controls until personnel are removed from the platform.
- **DO NOT** position the aerial platform against another object to steady the platform.
- **DO NOT** place materials on the guardrails or materials that exceed the confines of the guardrails unless approved by Skyjack.

Fall Protection

As per the ANSI A92.6-2006 standard, "The guardrail system of the aerial platform provides fall protection. If occupant(s) of the platform are required to wear personal fall protection equipment (PFPE), occupants shall comply with instructions provided by the aerial platform manufacturer (remanufacturer) regarding anchorage(s)."

If additional fall protection is required, by an employer or the authority having jurisdiction, Skyjack recommends the use of a fall restraint system to keep an occupant within the confines of the platform, and thus not expose the occupant to any fall hazard requiring a fall arrest.

All personal fall protection equipment must comply with applicable governmental regulations and must be inspected and used in accordance with the manufacturer's recommendations.

All personal fall protection equipment must be attached only to approved anchorage points within the platform of the aerial platform.

WARNING

Entering and exiting the aerial platform should only be done using the three points of contact.

- Use only equipped access openings.
- Enter and exit only when the aerial platform is in the fully retracted position.

- Do use three points of contact to enter and exit the platform. Enter and exit the platform from the ground only. Face the aerial platform when entering or exiting the platform.
- Three points of contact means that two hands and one foot or one hand and two feet are in contact with the aerial platform or the ground at all times during entering and exiting.

WARNING

An operator should not use any aerial platform that:

- does not appear to be working properly.
- has been damaged or appears to have worn or missing parts.
- has alterations or modifications not approved by the manufacturer.
- has safety devices which have been altered or disabled.
- has been tagged or blocked out for non-use or repair.

Failure to avoid these hazards could result in death or serious injury.

Jobsite Inspection

- Do not use in hazardous locations.
- Perform a thorough jobsite inspection prior to operating the aerial platform, to identify potential hazards in your work area.
- Be aware of moving equipment in the area. Take appropriate actions to avoid collision.

Maintenance and Inspection Schedule

The actual operating environment of the work platform governs the use of the maintenance schedule. The inspection points covered in Table 1.2. Maintenance and Inspection Checklist, indicates the areas of the aerial platform to be maintained or inspected and at what intervals the maintenance and inspections are to be performed.

Owner's Annual Inspection Record

It is the responsibility of the owner to arrange quarterly and annual inspections of the aerial platform. Table 1.1. Owner's Annual Inspection Record is to be used for recording the date of the inspection, owner's name, and the person responsible for the inspection of the work platform.

Replacement Parts

Use only original replacement parts. Parts such as batteries, wheels, railings, etc. with weight and dimensions different from original parts will affect stability of the aerial platform and must not be used without manufacturer's consent.

All replacement tires must be of the same size and load rating as originally supplied tires; to maintain safety and stability of aerial platform.

Consult SKYJACK's Service Department for optional tires specifications and installation.

WARNING

Any unit that is damaged or not operating properly must be immediately tagged and removed from service until proper repairs are completed.

Maintenance and Service Safety Tips

Maintenance and repair should only be performed by personnel who are trained and qualified to service this aerial platform.

All maintenance and service procedures should be performed in a well lighted and well ventilated area.

Anyone operating or servicing this aerial platform must read and completely understand all operating instructions and safety hazards in this manual and operating manual.

All tools, supports and lifting equipment to be used must be of proper rated load and in good working order before any service work begins. Work area should be kept clean and free of debris to avoid contaminating components while servicing.

All service personnel must be familiar with employer and governmental regulations that apply to servicing this type of equipment.

Keep sparks and flames away from all flammable or combustible materials.

Properly dispose of all waste material such as lubricants, rags, and old parts according to the relative law provisions obtaining in the country.

Before attempting any repair work, turn Battery Disconnect Switch to the "OFF" position.

Preventive maintenance is the easiest and least expensive type of maintenance.

Hydraulic System & Component Maintenance and Repair

The following points should be kept in mind when working on the hydraulic system or any component:

1. Any structure has limits of strength and durability. To prevent failure of structural parts of hydraulic components, relief valves which limit pressure to safe operating values are included in the hydraulic circuits.

2. Tolerance of working parts in the hydraulic system is very close. Even small amounts of dirt or foreign materials in the system can cause wear or damage to components, as well as general faulty operation of the hydraulic system. Every precaution must be taken to assure absolute cleanliness of the hydraulic oil.

3. Whenever there is a hydraulic system failure which gives reason to believe that there are metal particles or foreign materials in the system, drain and flush the entire system and replace the filter cartridges. A complete change of oil must be made under these circumstances.

4. Whenever the hydraulic system is drained, check the magnets in the hydraulic reservoir for metal particles. If metal particles are present, flush the entire system and add a new change of oil. The presence of metal particles also may indicate the possibility of imminent component failure. A very small amount of fine particles is normal.

5. All containers and funnels used in handling hydraulic oil must be absolutely clean. Use a funnel when necessary for filling the hydraulic oil reservoir, and fill the reservoir only through the filter opening. The use of cloth to strain the oil should be avoided to prevent lint from getting into the system.

6. When removing any hydraulic component, be sure to cap and tag all hydraulic lines involved. Also, plug the ports of the removed components.

NOTE

Samples of hydraulic oil should be drawn from the reservoir and tested annually. These samples should be taken when the oil is warmed through normal operation of the system. The sample should be analyzed by a qualified lubrication specialist to determine if it is suitable for continued use.

Oil change intervals will depend on the care used in keeping the oil clean, and the operating conditions. Dirt and/or moisture cotamination will dictate that the oil should be changed more often. Under normal use and operating conditions, the hydraulic oil should be changed every two years. Refer to Table 1.2 of this manual.

7. All hydraulic components must be dis-assembled in spotlessly clean surroundings. During disassembly, pay particular attention to the identification of parts to assure proper reassembly. Clean all metal parts in a clean mineral oil solvent. Be sure to thoroughly clean all internal passages. After the parts have been dried thoroughly, lay them on a clean, lint-free surface for inspection.

8. Replace all O-rings and seals when overhauling any component. Lubricate all parts with clean hydraulic oil before reassembly. Use small amounts of petroleum jelly to hold O-rings in place during assembly.

9. Be sure to replace any lost hydraulic oil when completing the installation of the repaired component, and bleed any air from the system when required.

10. All hydraulic connections must be kept tight. A loose connection in a pressure line will permit the oil to leak out or air to be drawn into the system. Air in the system can cause damage to the components and noisy or erratic system operation.

Maintenance Hints

Three simple maintenance procedures have the greatest effect on the hydraulic system performance, efficiency and life. Yet, the very simplicity of them may be the reason they are so often overlooked. What are they? Simply these:

1. Change filters annually. The filters will need to be changed more often depending on the operating conditions. Dirty, dusty, high moisture environments may cause the hydraulic system to be contaminated more quickly.
2. Maintain a sufficient quantity of clean hydraulic oil of the proper type and viscosity in the hydraulic reservoir.
3. Keep all connections tight.

About this Section

This section contains the maintenance and inspection schedule that is to be performed.

References are made to the procedures in section 5 that outline detailed step-by-step instructions for checks and replacements.

Service Bulletins

Before performing any scheduled maintenance inspection procedure, refer to service bulletins found in our web site: www.skyjack.com for updates related to service and maintenance of this aerial platform.

Maintenance and Inspection

Death or injury can result if the aerial platform is not kept in good working order. Inspection and maintenance should be performed by competent personnel who are trained and qualified on mantenance of this aerial platform.

WARNING

Failure to perform each procedure as presented and scheduled may cause death, serious injury or substantial damage.

NOTE

Preventive maintenance is the easiest and least expensive type of maintenance.

- Unless otherwise specified, perform each maintenance procedure with the aerial platform in the following configuration:
  - Aerial platform parked on a flat and level surface
  - Disconnect the battery by turning the main power disconnect switch to the “OFF” position.
- Repair any damaged or malfunction components before operating aerial platform.
- Keep records on all inspections.

Maintenance Instructions

This manual consists of four schedules to be done for maintaining on an aerial platform. Inspection schedule frequency is shown below:

Inspection Schedule

Daily	A
Frequently	A + B
Annually	A + B + C
Bi-annually	A + B + C + D

- Make copies of the maintenance and inspection checklist to be used for each inspection.
- Check the schedule on the checklist for the type of inspection to be performed.
- Place a check in the appropriate box after each inspection procedure is completed.
- Use the maintenance and inspection checklist and step-by-step procedures in section 5 to perform these inspections.
- If any inspection receives a fail, tag and remove the aerial platform from service.
- If any aerial platform component(s) has been repaired, an inspection must be performed again before removing the tag. Place a check in the repair column.

Legend

P = Pass
F = Fail
R = Repaired

Table 1.1 Owner's Annual Inspection Record

Model Number: _____					**Serial Number:** _____					
Inspection Date										
Recording Year	New	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**
Owner's Name	Skyjack Inc.									
Inspected By	Skyjack Inc.									

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As described earlier in this section, this decal is located on the scissor assembly. It must be completed after an annual inspection has been completed. Do not use the aerial platform if an inspection has not been recorded in the last 6 months.

Table 1.2 MAINTENANCE AND INSPECTION CHECKLIST

Serial Number: _____

Model: _____

Hourmeter Reading: _____ Name (Printed): _____

Date: _____

Time: _____ Signature: _____

Each item shall be inspected using the the appropriate section of the Skyjack operating manual.
As each item is inspected, write the apropriate grade in the box.

P - PASS
F - FAIL
R - REPAIRED

INSPECTION FREQUENCY

- ❑ DAILY
- ❑ FREQUENTLY
- ❑ ANNUALLY
- ❑ BI-ANNUALLY

Inspection Schedule	
Daily	A
Frequently*†	A + B
Annually†	A + B + C
Bi-annually†	A + B + C + D

Schedule		P	F	R
Schedule Maintenance Inspections				
Labels	A			
Limit Switches	A, B			
Entrance Side				
Main Power Disconnect Switch	A, B			
Base Control Switches	A, B			
Outrigger (If equipped)	A, B, C			
AC Outlet Receptacle	A, B			
Ladder	A, B			
Battery Tray Side				
Battery Tray	A, B			
Battery Charger	A, B			
Battery	A, B			
Steer Cylinder Assembly	A, B			
Wheel/Tire Assembly	A, B			
Tie Rod	A, B			
Greasing Points	A, B, C			
Hydraulic/Electric Tray Side				
Hydraulic Tank	A, B, C			
Hydraulic Oil	A, B, C			
Hydraulic Pump and Motor	A, B			
Electrical Panel	A, B			
Sevcon Control	A, B			
Main Manifold	A, B			
Load/Tilt Sensor	A, B			
Emergency Lowering Access Rod (If Equipped)	A, B			
Platform Assembly				
Lanyard Attachment Anchors	A, B			
AC Outlet on Platform	A, B			
Platform Control Console	A, B			
Manuals	A, B			
Powered Extension Control Console (If Equipped)	A, B			

Schedule		P	F	R
Lift Mechanism				
Maintenance Support	A, B			
Scissor Assembly	A, B			
Scissor Bumpers	A, B			
Rollers	A, B			
Lift Cylinder(s)	A, B			
Function Tests				
Test Main Power Discconect Switch	A, B			
Base Control Console				
Test Base Emergency Stop	A, B			
Test Base Lift Enable	A, B			
Test Lower/Neutral/Raise Switch	A, B			
Test Emergency Lowering	A, B			
Platform Control Console				
Test Platform Emergency Stop	A, B			
Test Enable Trigger Switch	A, B			
Test Steering	A, B			
Test Driving	A, B			
Test Brakes	A, B			
Test Platform Raising/Lowering	A, B			
Test Lowering Warning	A, B			
Test Horn	A, B			
Test Speed Limit	A, B			

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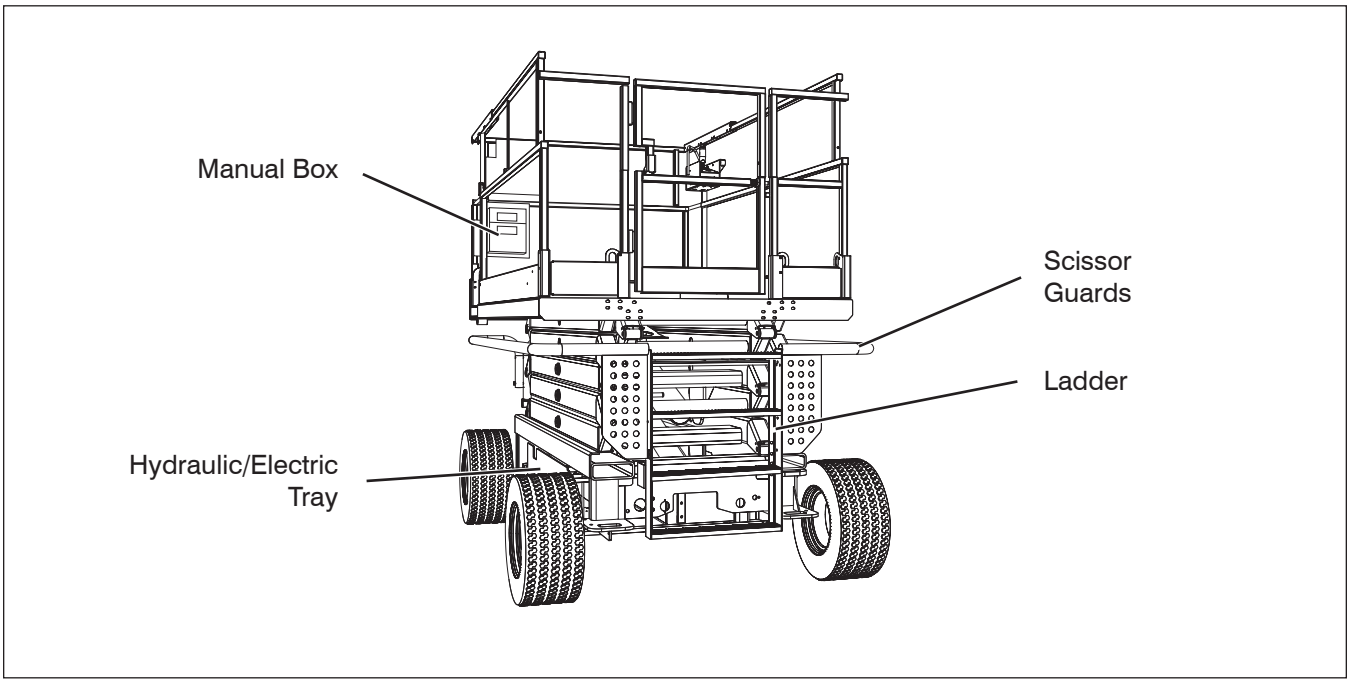
A - Perform Visual and Daily Maintenance Inspections & Functions Test. Refer to Section 2.7 of the Operating Manual.
B - Perform Scheduled Maintenance Inspection every three months or 150 hrs. Refer to Section 1 of this manual.
C - Perform Scheduled Maintenance Inspection every year. Refer to Section 1 of this manual.
D - Perform Scheduled Maintenance Inspection every 2 years. Refer to Section 1 of this manual.
***** Perform scheduled inspection every three months or 150 hours.
† - Refer to Skyjack's website @ www.skyjack.com for latest service bulletins porior to performing quarterly or yearly inspection.

Note: Make a copy of this page or visit the Skyjack web site:www.skyjack.com for a printable copy.



1.1 Scheduled Maintenance Inspections

Begin the visual and daily maintenance inspections by checking each item in sequence for the conditions listed in this section.

WARNING

To avoid injury, do not operate an aerial platform until all malfunctions have been corrected.

WARNING

To avoid possible injury, ensure aerial platform power is off during your visual and daily maintenance inspections.

Electrical

Maintaining the electrical components is essential to good performance and service life of the aerial platform.

Inspect the following areas for chafed, corroded and loose wires:

- base to platform cables and wiring harness
- battery tray wiring harnesses
- hydraulic/electrical wiring harnesses

Hydraulic

Maintaining the hydraulic components is essential to good performance and service life of the aerial platform.

Perform a visual inspection around the following areas:

- hoses and fittings
- all hydraulic cylinders
- all hydraulic manifolds
- the underside of the base
- ground area under the aerial platform

1.1-1 Labels

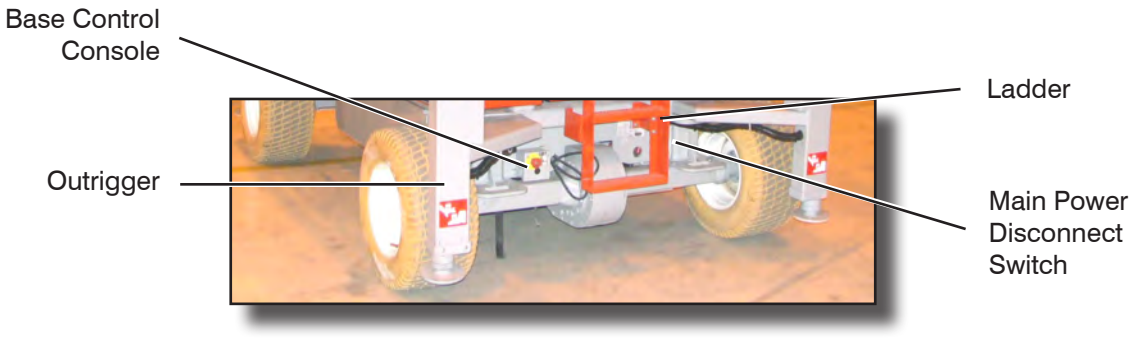
Refer to the labels section in this manual and determine that all labels are in place and are legible.

1.1-2 Limit Switches

Detecting limit switch malfunction is essential to safe aerial platform operation. Ensure limit switches are properly secured and movement is not obstructed.

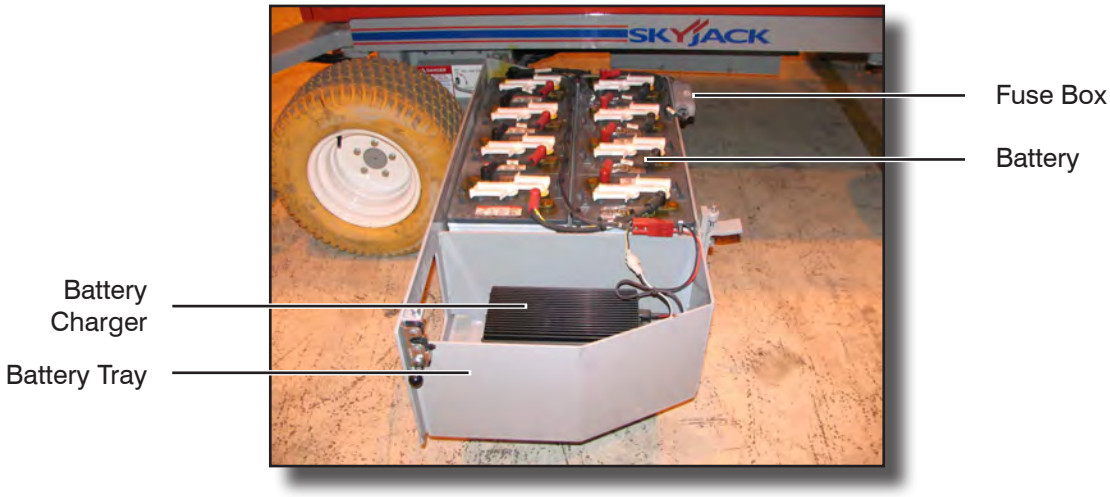
Visually inspect all limit switch located inside the scissor arms and the outrigger assemblies for the following:

- broken or missing actuator arm
- missing fasteners
- loose wiring



1.1-3 Entrance Side

- **Main Power Disconnect Switch**
  - Turn main power disconnect switch to "◯" off position.
  - Ensure all cables are secure and switch is in proper working condition.
- **Base Control Switches**
  - Ensure there are no signs of visible damage and all switches are in their neutral positions.
- **Drivetrain Assembly**
  - Ensure there is no visible damage.
- **Outrigger (If Equipped)**
  - Ensure there are no loose or missing parts and there is no visible damage.
- **AC Outlet Receptacle**
  - Ensure receptacle is free from dirt and obstructions.
- **Ladder**
  - Ensure there are no loose or missing parts and there is no visible damage.



1.1-4 Battery Tray Side

- **Battery Tray**
  - Ensure tray latch is secure and in proper working order.
- **Battery Charger**
  - Ensure charger is secure and shows no visible damage.
- **Battery**
  Proper battery condition is essential to good performance and operational safety. Improper fluid levels or damaged cables and connections can result in component damage and hazardous conditions.

WARNING

Explosion hazard. Keep flames and sparks away. Do not smoke near batteries.

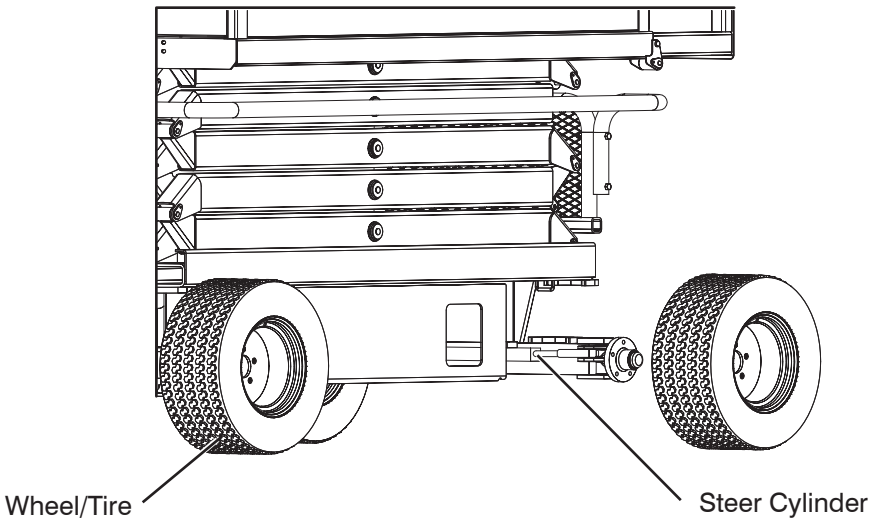
WARNING

Battery acid is extremely corrosive - Wear proper eye and facial protection as well as appropriate protective clothing. If contact occurs, immediately flush with cold water and seek medical attention.

1. Check battery case for damage.
2. Clean battery terminals and cable ends thoroughly with a terminal cleaning tool or wire brush.
3. Ensure all battery connections are tight.
4. If applicable, check battery fluid level. If plates are not covered by at least 1/2" (13 mm) of solution, add distilled or demineralized water.
5. Replace battery if damaged or incapable of holding a lasting charge.

WARNING

Use original or manufacturer-approved parts and components for the aerial platform.



- **Steer Cylinder Assembly**
  - Ensure steer cylinder assembly is properly secured and there are no loose or missing parts.
- **Wheel/Tire Assembly**
  The aerial platform is either equipped with solid rubber tires or foam-filled tires. Tire and/or wheel failure could result in an aerial platform tip-over. Component damage may also result if problems are not discovered and repaired in a timely fashion.
  - Check all tire treads and sidewalls for cuts, cracks, punctures and unusual wear.
  - Check each wheel for damage and cracked welds.
  - Check each lug nut for proper torque to ensure none are loose.
  - Check wheel motor assembly for loose or missing parts and signs of visible damage.
  - Ensure wheels are aligned and true vertically and horizontally.
- **Tie Rod**
  - Ensure there are no loose or missing parts, tie rod end studs are locked and there is no visible damage.
- **Greasing Points**
  - Ensure greasing points have no sign of visible damage and are free from dirt and obstructions.

1.1-5 Hydraulic/Electric Tray Side

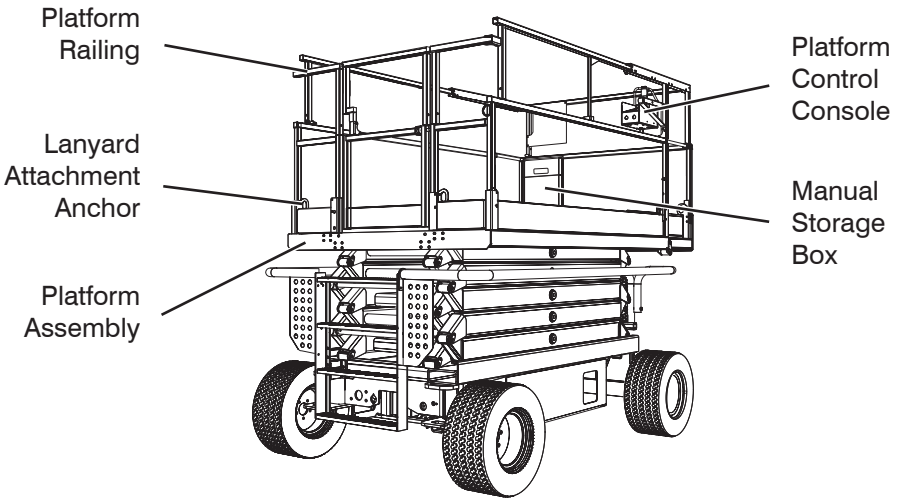
- Ensure tray latch is secure and in proper working order.

- **Hydraulic Tank**
  - Ensure hydraulic filler cap is secure.
  - Ensure tank shows no visible damage and no evidence of hydraulic leakage.
- **Hydraulic Oil**
  - Ensure platform is fully lowered, and then visually inspect the sight gauge located on the side of the hydraulic oil tank.
  - The hydraulic oil level should be at or slightly above the top mark of the sight glass.

C - Annual Inspection

- Refer to section 1 - Hydraulic System & Component Maintenance and Repair.

- **Hydraulic Pump and Motor**
  - Ensure there are no loose or missing parts and there is no visible damage.
- **Electrical Panel**
  - Ensure panel is properly secured and there is no visible damage.
  - Ensure there are no loose wires or missing fasteners.
- **Sevcon Control**
  - Ensure Sevcon control panel is properly secure and there is no visible damage.
- **Main Manifold**
  - Ensure all fittings and hoses are properly tightened and there is no evidence of hydraulic leakage.
  - Ensure there are no loose wires or missing fasteners.
- **Load/Tilt Sensor**
  - Ensure load/tilt sensor is properly secured and there is no visible damage.
- **Emergency Lowering Access Rod (If Equipped)**
  - Ensure rod is properly secured and there is no visible damage.



1.1-6 Platform Assembly

WARNING

Ensure that you maintain three points of contact to mount/dismount platform.

1. Use the ladder of aerial platform to access platform.

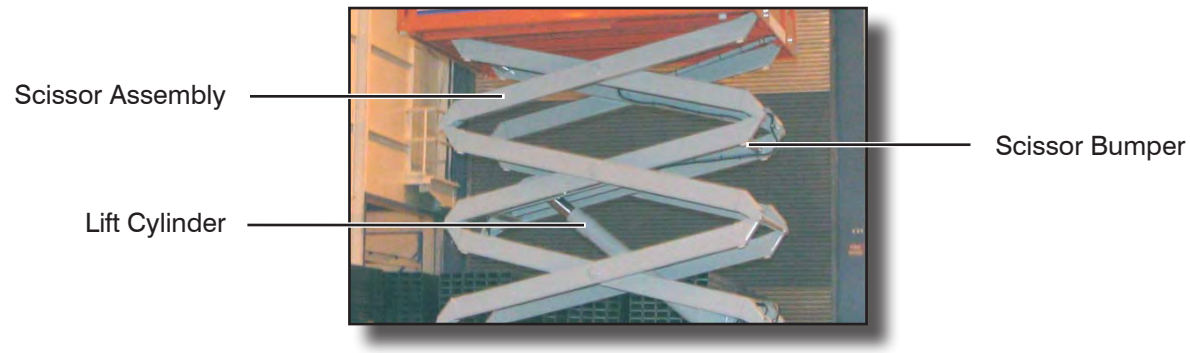
2. Close the gate.

   - Ensure there are no loose or missing parts and there is no visible damage.
   - Ensure all fasteners are securely in place.
   - Ensure all railings are properly positioned and secured.
   - Ensure gate is in good working order.

- **Lanyard Attachment Anchors**
  - Ensure attachment rings are secure and no visible damage.
- **AC Outlet on Platform**
  - Ensure outlet has no visible damage and free from dirt or obstructions.
- **Platform Control Console**
  - Ensure all switches and controller are returned to neutral and are properly secured.
  - Ensure there are no loose or missing parts and there is no visible damage.
- **Manuals**

  Ensure a copy of operating manual and other important documents are enclosed in manual storage box.

  - Check to be sure manual storage box is present and in good condition.
  - Ensure manuals are legible and in good condition.
  - Always return manuals to the manual storage box after use.



- **Powered Extension Control Console (If Equipped)**
  - Ensure all switches are returned to neutral and are properly secured.
  - Ensure there are no loose or missing parts and there is no visible damage.

WARNING

Ensure that you maintain three points of contact to mount/dismount platform.

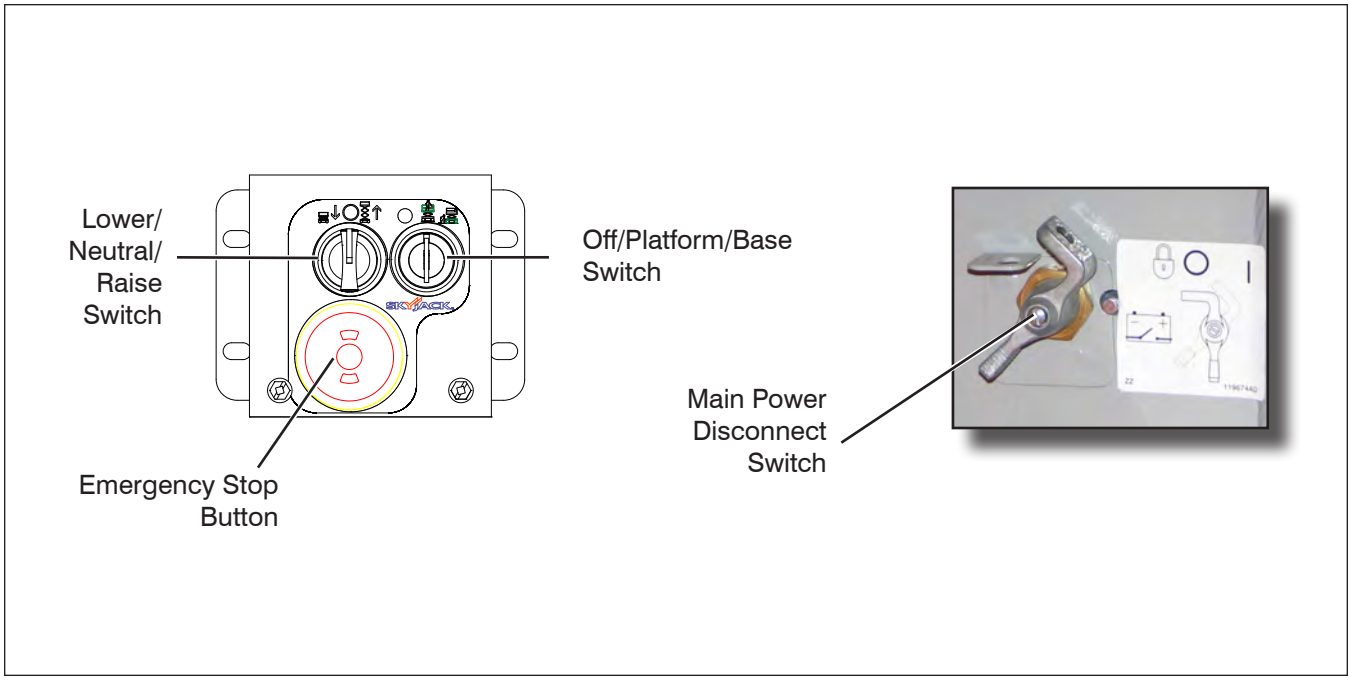
3. Use the ladder to dismount from platform.

1.1-7 Lifting Mechanism

1. Raise the platform until there is adequate clearance to swing down the maintenance support.

   - **Maintenance Support**
     - Ensure maintenance support is properly secured and shows no visible damage.
   - **Scissor Assembly**
     - Ensure scissor assembly shows no visible damage and no signs of deformation in weldments.
     - Ensure all pins are properly secured.
     - Ensure cables and wires are properly routed and shows no signs of wear and/or physical damage.
   - **Scissor Bumpers**
     - Ensure bumpers are secure and shows no sign of visible damage.
   - **Rollers**
     - Ensure rollers are secure and there is no visible damage.
     - Ensure rollers' path of travel are free from dirt and obstructions.
   - **Lift Cylinders**
     - Ensure each lift cylinder is properly secured, there are no loose or missing parts and there is no evidence of damage.
     - Ensure all fittings and hoses are properly tightened and there is no evidence of hydraulic leakage.

2. Raise the platform until there is adequate clearance to swing up the maintenance support.
3. Swing up maintenance support into storage bracket.
4. Fully lower the platform.



1.2 Function Tests

Function tests are designed to discover any malfunctions before aerial platform is put into service. The operator must understand and follow step-by-step instructions to test all aerial platform functions.

WARNING

Never use a malfunctioning aerial platform. If malfunctions are discovered, aerial platform must be tagged and placed out of service. Repairs to aerial platform may only be made by a qualified service technician.

After repairs are completed, operator must perform a pre-operation inspection and a series of function tests again before putting aerial platform into service.

Prior to performing function tests, be sure to read and understand Section 2.10 - Start Operation of the Operating manual.

1.2-1 Test Main Power Disconnect Switch

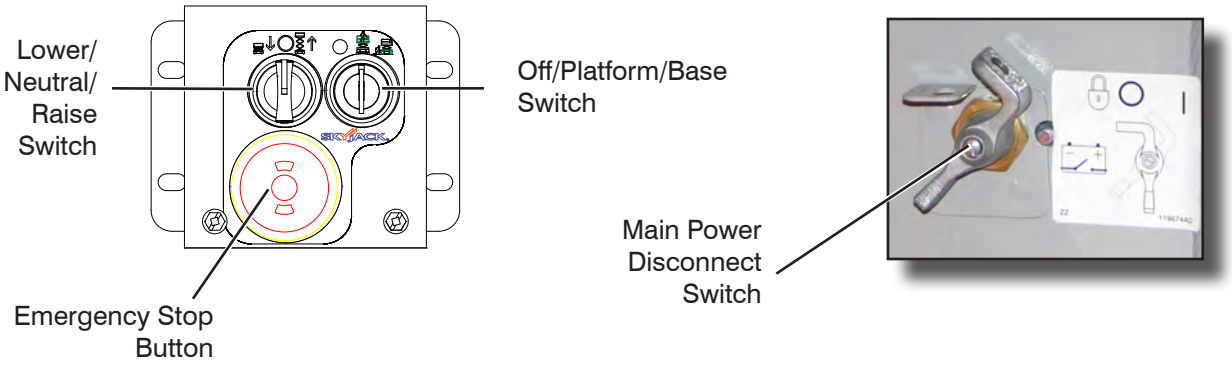
1. At rear of the base, turn main power disconnect switch to "◯" off position.
   Result: Aerial platform functions should not operate.

1.2-2 Base Control Console

WARNING

Ensure that you maintain three points of contact when using the ladder to mount/ dismount platform.

1. Use the ladder of aerial platform to access platform.
2. Close the gate.
3. On platform control console, pull out "●" emergency stop button.
4. Select base/off/platform key switch to "⛟" base position.
5. Use the ladder to dismount from platform.
6. Turn main power disconnect switch to "|" on position.



- **Test Base Emergency Stop**

  1. Push in base "" emergency stop button and attempt to raise or lower the platform.
     Result: Platform raising and lowering functions should not operate.

  2. Pull out base "" emergency stop button.

- **Test Off/Platform/Base Switch**

WARNING

Be aware of overhead obstructions or other possible hazards around the aerial platform when lifting.

  1. Select off/platform/base key switch "" off position. Attempt to raise or lower the platform.
     Result: Platform raising and lowering functions should not operate.

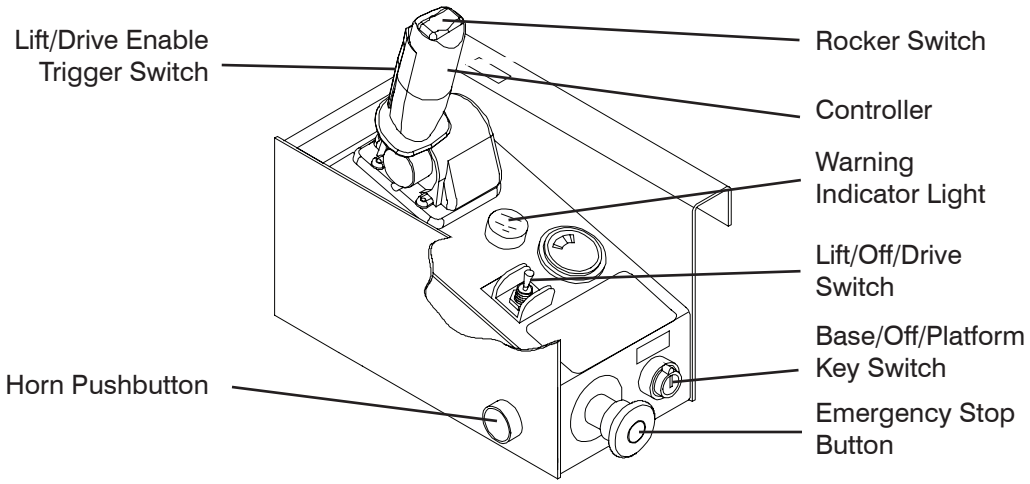
  2. Select off/platform/base key switch to "" platform position. Attempt to raise or lower the platform.
     Result: Platform raising and lowering functions should not operate.

  3. Select and hold off/platform/base key switch to "" base position. Attempt to raise or lower the platform.
     Result: Platform raising and lowering functions should operate.

- **Test Lower/Neutral/Raise Switch**

  1. Select and hold off/platform/base key switch to "" base position and "" raise the platform with lower/neutral/raise switch.
     Result: Platform should rise.

  2. Select and hold off/platform/base key switch to "" base position and "" lower the platform with lower/neutral/raise switch.
     Result: Platform should lower.



- **Test Emergency Lowering**

1. Raise the platform.
2. Locate holding valve manual override knob at the base of each lift cylinder. Depress and turn counterclockwise. If necessary, use access rod that is located on the base of the aerial platform.
3. On hydraulic/electric tray, pull out and hold emergency lowering valve to fully lower the platform.
   Result: The platform should lower.
4. To restore normal operation, depress and turn holding valve manual override knobs clockwise.

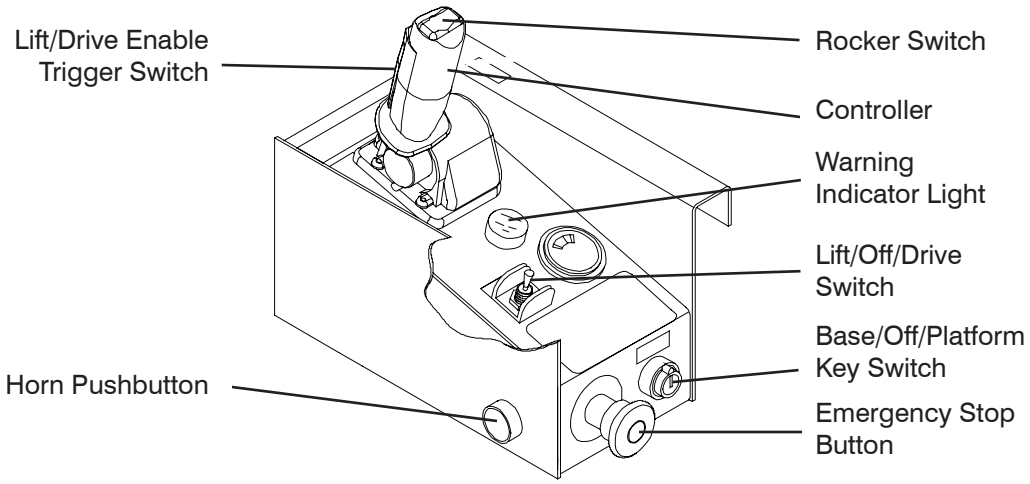
1.2-3 Platform Control Console

1. Ensure base "" emergency stop button is pulled out.
2. Ensure emergency main power disconnect switch is in "|" on position.

WARNING

Ensure that you maintain three points of contact when using the ladder to mount/ dismount platform.

3. Use the ladder of aerial platform to access platform.
4. Close the gate.
5. On platform control console, pull out "" emergency stop button.
6. Select base/off/platform key switch to "" platform position.



- **Test Platform Emergency Stop**

  1. Push in " " emergency stop button and attempt to activate any platform function.
     Result: All selected platform functions should not operate.

- **Test Enable Trigger Switch**

  1. Pull out " " emergency stop button.

  2. Without activating " " enable trigger switch, attempt to activate any platform function.
     Result: All platform functions should not operate.

- **Test Steering**

  1. Select lift/off/drive switch to " " drive position.

  2. Press rocker switch on top of controller handle to " " left and " " right.
     Result: Steer wheels should turn left and right.

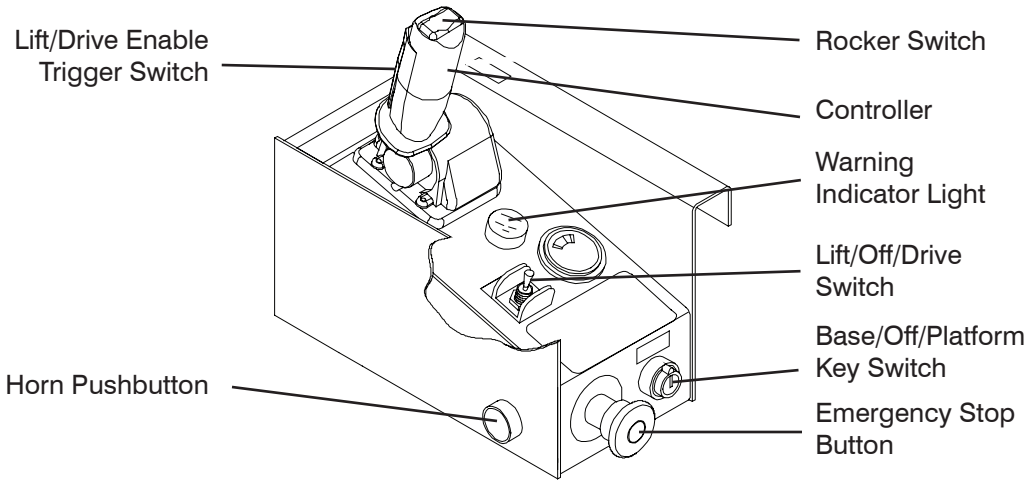
- **Test Driving**

  1. Ensure path of intended motion is clear.

  2. Activate and hold " "enable trigger switch.

  3. Slowly move controller handle in " " forward direction until aerial platform begins to move, and then return handle to center position.
     Result: Aerial platform should move in forward direction, and then come to a stop.

  4. Slowly move controller handle in " " reverse direction until aerial platform begins to move, and then return handle to center position.
     Result: Aerial platform should move in reverse direction, and then come to a stop.



- **Test Brake**

WARNING

Brake will engage instantly when you release the controller handle, causing aerial platform to stop immediately.

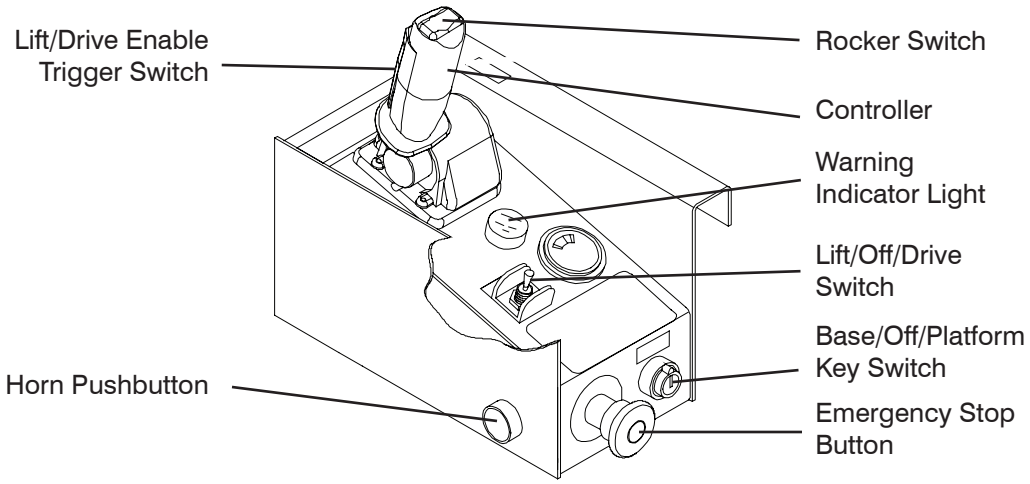
1. Ensure path of intended motion is clear.
2. Activate and hold "" enable trigger switch.
3. Drive aerial platform "" forward and then "" backward. Test brake by releasing controller handle.
   Result: Aerial platform should come to a stop. If aerial platform pulls to one side while stopping, do not operate aerial platform until brake adjustments have been checked.
4. Drive aerial platform "" forward and then "" backward. Test brake again by releasing "" enable trigger switch only.
   Result: Aerial platform should come to an instant and abrupt stop. If aerial platform does not stop immediately, or if aerial platform pulls to one side while stopping, do not operate aerial platform until brake adjustments have been checked.

- **Test Platform Raising/Lowering**

WARNING

Be aware of overhead obstructions or other possible hazards around the aerial platform when lifting.

1. Select lift/torque/drive switch to "" lift position.
2. Activate and hold "" enable trigger switch.
3. Push controller handle and raise the platform to an approximate height of 30.5 cm.
   Result: Platform should rise.
4. Pull controller handle and lower the platform fully.
   Result: Platform should lower.



- **Test Lowering Warning**

  1. Raise the platform until approximately a height of 3 to 4 meters is reached then attempt to fully lower the platform.
     Result: Platform should stop lowering at a height of 2.5 meters high and an alarm should sound.

  2. Release controller handle.

- **Test Horn**

  1. Push "" horn pushbutton.
     Result: Horn should sound.

- **Test Speed Limit**

WARNING

Be aware of overhead obstructions or other possible hazards around the aerial platform when lifting.

1. Ensure path of intended motion is clear.

2. Raise the platform until approximately a height of 2 meters is reached and attempt to drive forward or reverse.
   Result: Aerial platform should move slower than when it was in stowed position.

Section 2
MAINTENANCE TABLES AND DIAGRAMS

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2.3 Floor Loading Pressure 4
2.4 Torque Specifications 6

Table 2.1 Specifications and Features

MODEL	DC Electric Conventional
	6832E
Weight *	2787 kg
Overall width	1,7 m
Overall length	2,5 m
Platform Size (inside)	1,4 m x 2,1 m
Height	
Working Height	11,8 m
Platform Elevated Height	9,8 m
Stowed Height (Railings Up)	2,5 m
Stowed Height (Railings Down)	2,1 m
Drive Height	7,9 m
Standard Operating Times	
Lift Time (Rated Load)	60 s
Lower Time (Rated Load)	50 s
Chassis	
Normal Drive Speed	3,2 km/h
Elevated Drive Speed	0,85 km/h
Gradeability (Ramp Angle)	30%
Tires (Solid Rubber)	23 x 10,5 x 12
Hydraulic Oil	
Type	ATF Dexron III
Tank Capacity (Liters)	30

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* Weight with standard 0.9 m extension platform.
(Refer to nameplate for aerial platforms with 1.5 m extension platform.)

Table 2.2 Maximum Platform Capacities (Evenly Distributed)

MODEL	Manual Extension Platform				Powered Extension Platform		Maximum Wind Speed	Tilt Cutout Setting
	Total Capacity		Extension Capacity		Total Capacity	Extension Capacity		
6832E	454 kg	3 Persons	136 kg	1 Person	N/A		9.4 m/s	2 x 4

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NOTE: Overall Capacity - Occupants and materials not to exceed rated load.

BEAUFORT SCALE	Wind Speed				Ground Conditions
	m/s	km/h	ft/s	mph	
3	3.4 – 5.4	12.5 – 19.4	11.5 – 17.75	8 – 12	Papers and thin branches move, flags wave
4	5.4 – 8.0	19.4 – 28.8	17.75 – 26.25	13 – 17	Dust is raised, paper whirls up, and small branches sway.
5	8.0 – 10.8	28.8 – 38.9	26.25 – 35.5	18 – 24.25	Shrubs with leaves start swaying. Wave crests are apparent in ponds or swamps.
6	10.8 – 13.9	38.9 – 50.0	35.5 – 45.5	24.5 – 31	Tree branches move. Power lines whistle. It is difficult to open an umbrella.
7	13.9 – 17.2	50.0 – 61.9	45.5 – 56.5	31 – 38.5	Whole trees sway. It is difficult to walk against the wind.

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WARNING

This aerial platform is equipped with a load sensing system. Do not exceed the rated capacity of the aerial platform. Failure to avoid this will prevent operation of all normal controls/functions of the aerial platform. To resume normal operation remove the additional loads.

WARNING

Use only original replacement parts. Parts such as batteries, chargers, wheels, railings, etc., with weight and dimensions different from original parts will affect the stability of the aerial platform and must not be used without the manufacturer's consent.

Table 2.3 Floor Loading Pressure

MODEL		Total Aerial Platform Weight	Total Aerial Platform Load		
			Wheel	LCP**	OUP**
		kg	kg	KPa (kN/m^2)	KPa (kN/m^2)
6832E	min*	2787	1116	1068.00	6.40
	max*	3241	1286	1085.00	7.60
6832E Outrigger Pads	min*	2985	N/A	640.00	7.00
	max*	3439		748.00	8.10

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* **min** - Total aerial platform weight with no options

max - Aerial platform weight + all options + full capacity

** **LCP - Locally Concentrated Pressure** is a measure of how hard the aerial platform presses on the areas in direct contact with the floor. The floor covering (tile, carpet, etc.) must be able to withstand more that the indicated values above.

OUP - Overall Uniform Pressure is a measure of the average load the aerial platform imparts on the whole surface directly underneath it. The structure of the operating surface (beams, etc.) must be able to withstand more than the indicated values above.

NOTE:

The **LCP** or **OUP** that an individual surface can withstand varies from structure to structure and is generally determined by the engineer or architect for that particular structure.

Floor Loading Pressure

Locally Concentrated Pressure (LCP):

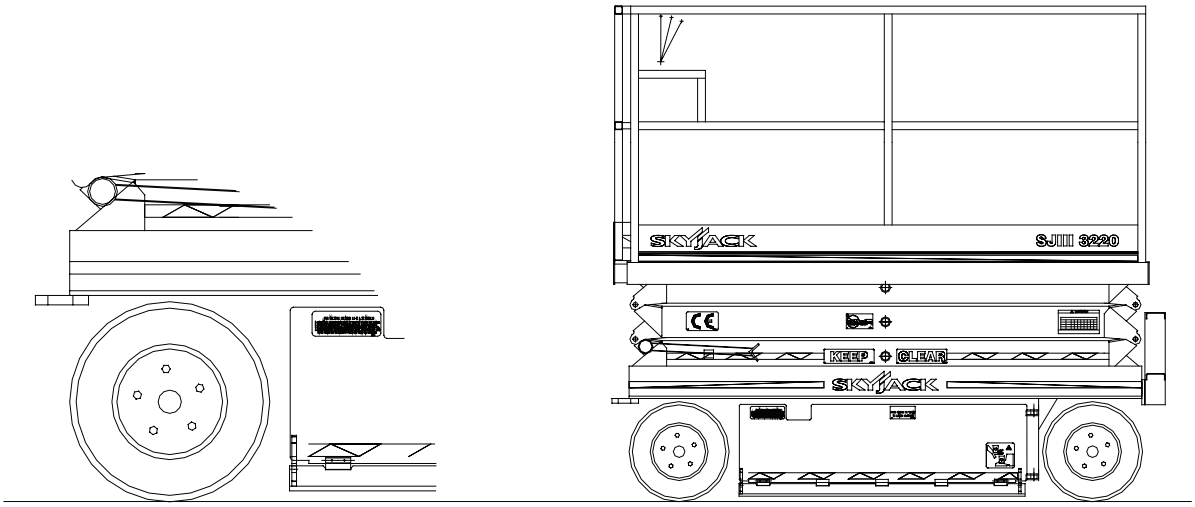
Foot Print Area = Tread Contact Area

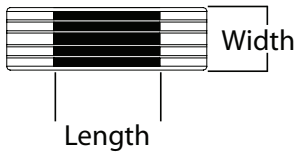
$$LCP = 0.4 \times \frac{\text{Aerial Platform Weight + Capacity}}{\text{Foot Print Area}}$$

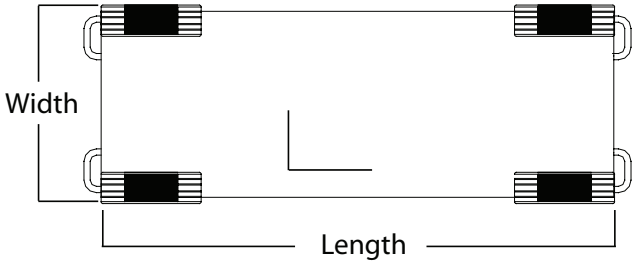
Overall Uniform Pressure (OUP):

Base Area = Length x Width

$$OUP = \frac{\text{Aerial Platform Weight + Capacity}}{\text{Base Area}}$$







WARNING

Intermixing tires of different types or using tires of types other than those originally supplied with this equipment can adversely affect stability. Therefore, replace tires only with the exact original Skyjack-approved type. Failure to operate with matched approved tires in good condition may result in death or serious injury.

Table 2.4 Torque Specifications

Directional valve mounting bolts	28-32 lbf. in	2.16 - 3.61 Nm
Wheel mounting bolts (68xx)	90 lbf. ft	122.04 Nm
Wheel motor castle nut (68xx)	350 lbf. ft	474.60 Nm
Parking brake cylinder rod nut	35 lbf. ft	47.46 Nm

Cartridge

Torque	Size					
	8	38	58	10	12	16
lbf. ft (max)	20	20	20	25	35	50
lbf. in (max)	240	240	240	300	420	600
Nm (max)	27.12	27.12	27.12	33.9	47.46	67.8

Coils

Torque	Size
	All coils
lbf. ft (max)	4 to 5
lbf. in (max)	48 to 60
Nm (max)	5.42 to 6.78

SAE Plugs

Torque	Size							
	2	4	5	6	8	10	12	16
lbf. ft (max)	3	10	15	15	25	25	30	35
lbf. in (max)	36	120	180	180	300	300	360	420
Nm (max)	4.07	13.56	20.34	20.34	33.9	33.9	40.68	47.46

Nm = Newton-meter **lbf. ft = Pound-force foot** **lbf. in = Pound-force inch**

Section 3
SYSTEM COMPONENT IDENTIFICATION AND SCHEMATICS

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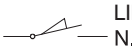
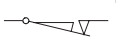
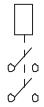
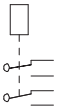
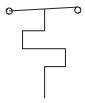
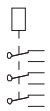
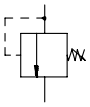
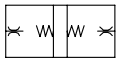
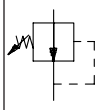
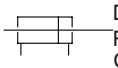
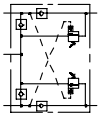
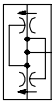
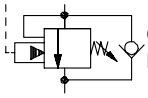
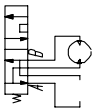
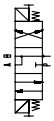
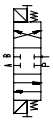
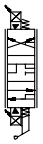
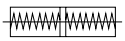
3.1 Electrical Symbol Chart

CIRCUITS CROSSING NO CONNECTION	HOURMETER	KEY SWITCH	 LIMIT SWITCH N.O.
CIRCUITS CONNECTED	LIGHT	FOOT SWITCH	LIMIT SWITCH N.O. HELD CLOSED
BATTERY	HYDRAULIC VALVE COIL	TOGGLE SWITCH	 LIMIT SWITCH N.C.
GROUND	PROPORTIONAL HYDRAULIC VALVE COIL	PUSH BUTTON	LIMIT SWITCH N.C. HELD OPEN
FUSE	ELECTRIC MOTOR	ROTARY SWITCH	SILICON CONTROLLED RECTIFIER
CIRCUIT BREAKER	HORN	LIMIT SWITCH	PROXIMITY SWITCH
VOLT METER	EMERGENCY STOP BUTTON	CAM OPERATED LIMIT SWITCH	PNP TRANSISTOR
CAPACITOR	RESISTOR	TILT SWITCH	NPN TRANSISTOR
POTENTIOMETER	LEVEL SENSOR	SINGLE POLE SINGLE THROWN RELAY	PRESSURE/ VACUUM SWITCH
SINGLE POLE DOUBLE THROW RELAY	 DOUBLE POLE SINGLE THROW RELAY	 DOUBLE POLE DOUBLE THROW RELAY	 TEMPERATURE SWITCH
 TRIPLE POLE DOUBLE THROW RELAY	DIODE	RHEOSTAT	ANGLE TRANSDUCER
PRESSURE TRANSDUCER	TRANSISTOR		

3.2 Hydraulic Symbol Chart

LINE CROSSING	VARIABLE DISPLACEMENT PUMP	SHUTTLE VALVE	VELOCITY FUSE
LINE JOINED	HAND PUMP	ACCUMULATOR, GAS CHARGED	SINGLE ACTING CYLINDER
HYDRAULIC TANK	 RELIEF VALVE	 CUSHION CYLINDER	DOUBLE ACTING CYLINDER
HYDRAULIC FILTER WITH BYPASS	 PRESSURE REDUCING VALVE	PRESSURE SWITCH	 DOUBLE ACTING DOUBLE RODDED CYLINDER
ELECTRIC MOTOR	FIXED ORIFICE	 MOTION CONTROL VALVE	SPRING APPLIED HYDRAULIC RELEASED BRAKE
ENGINE	ADJUSTABLE FLOW CONTROL	 FLOW DIVIDER COMBINER	BRAKE CYLINDER
FIXED DISPLACEMENT PUMP	CHECK VALVE	 COUNTER BALANCE VALVE	ROTARY ACTUATOR
VARIABLE DISPLACEMENT HYDRAULIC MOTOR	OIL COOLER	VALVE COIL	BI DIRECTIONAL HYDRAULIC MOTOR
 SERIES PARALLEL HYDRAULIC MOTOR	TWO POSITION TWO WAY NORMALLY CLOSED VALVE	TWO POSITION THREE WAY VALVE	 THREE POSITION FOUR WAY CLOSED CENTER OPEN PORT
TWO POSITION TWO WAY NORMALLY OPEN VALVE	TWO POSITION THREE WAY VALVE	 THREE POSITION FOUR WAY CLOSED CENTER CLOSED PORT	 THREE POSITION FOUR WAY PROPORTIONAL
PRESSURE TRANSDUCER	MAIN LINES Solid	PILOT LINES Dashed	
 SERVO			

3.3 Hydraulic Schematic Parts List

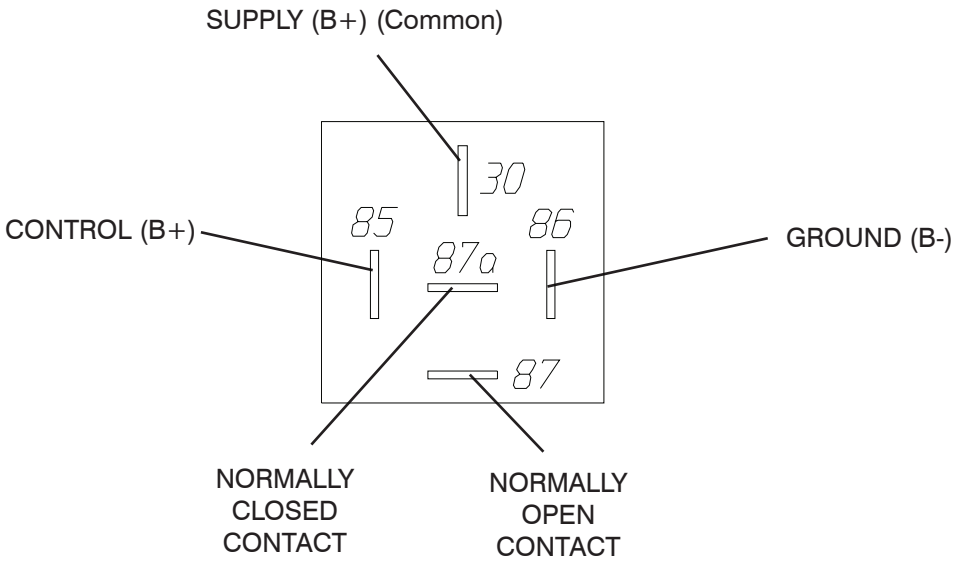
Index No.	Skyjack Part No.	Qty.	Description
C1	120240	1	CYLINDER (Steer)
C2	120989	1	CYLINDER (Lift - lower)
C3	120989	1	CYLINDER (Lift - upper)
C4	120255	1	CYLINDER (Powered extension platform)
C5	120255	1	CYLINDER (Powered extension platform)
C6	801951	1	CYLINDER (Left front outrigger)
C7	801951	1	CYLINDER (Right front outrigger)
C8	801951	1	CYLINDER (Right rear outrigger)
C9	801951	1	CYLINDER (Left rear outrigger)
CV1	800742	1	VALVE, Pilot check (Outrigger)
CV2	800742	1	VALVE, Pilot check (Outrigger)
CV3	800742	1	VALVE, Pilot check (Outrigger)
CV4	800742	1	VALVE, Pilot check (Outrigger)
CV5	800742	1	VALVE, Pilot check (Outrigger)
CV6	800742	1	VALVE, Pilot check (Outrigger)
CV7	800742	1	VALVE, Pilot check (Outrigger)
CV8	800742	1	VALVE, Pilot check (Outrigger)
CV9	122376	1	VALVE, Check
F1	109568	1	RETURN FILTER ASSEMBLY
2H-13	103655	1	VALVE, Control (Lowering)
2H-13B	103655	1	VALVE, Control (Lowering)
2H-13B-1	107269	1	VALVE, Control (Holding)
2H-13B-2	107269	1	VALVE, Control (Holding)
2H-13-1	107269	1	VALVE, Control (Lower right hand cylinder holding)
2H-13-2	107269	1	VALVE, Control (upper right hand cylinder holding)
2H-13-3	107269	1	VALVE, Control (upper left hand cylinder holding)
2H-13-4	107269	1	VALVE, Control (lower left hand cylinder holding)
2H-17A	103655	1	VALVE, Control (Outrigger holding)
2H-21A	102626	1	VALVE, Control (Dump)
3H-14F	106273	1	VALVE, Control (Lift)
4H-23	103614	1	VALVE, Control (Right steer) (Vickers) (includes 4H-24)
	128798	1	VALVE, Control (Right steer) (Hytos) (includes 4H-24)
4H-24	-	1	VALVE, Control (Left steer) (Vickers) (includes 4H-23)
	-	1	VALVE, Control (Left steer) (Hytos) (includes 4H-23)
4H-26	103614	1	VALVE, Powered platform extend (Vickers) (includes 4H-27)
	128798	1	VALVE, Powered platform extend (Hytos) (includes 4H-27)
4H-27	-	1	VALVE, Powered platform retract (Vickers) (includes 4H-26)
	-	1	VALVE, Powered platform retract (Hytos) (includes 4H-26)
4H-71	122378	1	VALVE, Left front outrigger Retract (Includes 4H-75)

Parts list continued on the following page.

3.3 Hydraulic Schematic Parts List (Continued)

Index No.	Skyjack Part No.	Qty.	Description
			Parts list continued from the previous page.
4H-72	122378	1	VALVE, Right front outrigger retract (Includes 4H-76)
4H-73	122378	1	VALVE, Right rear outrigger retract (Includes 4H-77)
4H-74	122378	1	VALVE, Left rear outrigger retract (Includes 4H-78)
4H-75	-	1	VALVE, Left front outrigger extend (Includes 4H-71)
4H-76	-	1	VALVE, Right front outrigger extend (Includes 4H-72)
4H-77	-	1	VALVE, Right rear outrigger extend (Includes 4H-73)
4H-78	-	1	VALVE, Left rear outrigger extend (Includes 4H-74)
MB1	119453	1	BLOCK, Manifold (Main)
MB2	107493	1	BLOCK, Manifold (Emergency lowering)
MB3	106688	1	BLOCK, Manifold (Lower holding valve) **(CE)**
MB4	108778	2	BLOCK, Manifold (Upper holding valve)
MB5	107382	1	BLOCK, Manifold (Extension deck)
MB6	120775	1	BLOCK, Manifold (Outrigger control valves)
MB7	801161	4	BLOCK, Manifold (Outrigger cylinder)
O1	120652	1	ORIFICE (0.045” diameter) (Speed)
O2	105811	1	ORIFICE (0.040” diameter) (Steer)
O3	105811	1	ORIFICE (0.040” diameter) (Steer)
O4	122213	1	ORIFICE (0.073” diameter) (Lowering) **(Model 6832)**
O5	105281	1	ORIFICE (0.067” diameter) (Lower cylinder lowering)
O6	105281	1	ORIFICE (0.067” diameter) (Upper cylinder lowering)
O7	105811	1	ORIFICE (0.040” diameter) (Outrigger)
O8	105811	1	ORIFICE (0.040” diameter) (Outrigger)
O9	105811	1	ORIFICE (0.040” diameter) (Outrigger)
O10	105811	1	ORIFICE (0.040” diameter) (Outrigger)
P1	106587	1	PUMP, Hydraulic (JS Barnes)
PS1	102863	1	SWITCH, Pressure (Option)
	113799	1	• MANIFOLD BLOCK (with pressure switch option)
PT1	134432	1	TRANSDUCER, Pressure (3000 psi) **(CE)**
R1	104534	1	VALVE, Relief (System)
R2	104534	1	VALVE, Relief (Lift)
R3	106557	4	VALVE, Relief (Lift cylinder)
V1	107271	1	VALVE (Emergency lowering)

3.4 Electrical Components Parts List



Index No.	Skyjack Part No.	Qty.	Description
10ACR	108589	1	RELAY, 24 Volt (Outrigger power)
10BCR	108589	1	RELAY, 24 Volt (Brake)
12CCR	126469	1	RELAY, 24 Volt (Steer switch relay)
12ECR	108589	1	RELAY, 24 Volt (Joystick enable)
13BCR	117625	1	RELAY, 24 Volt (LWS time delay cut-out) **(CE)**
17ACR	108589	1	RELAY, 24 Volt (Outrigger lift disable)
28CR	108589	1	RELAY, 24 Volt (Tilt)
39CR	108589	1	RELAY, 24 Volt (LWS limit switch) **(CE)**
41CR	108589	1	RELAY, 24 Volt (LWS time delay) **(CE)**
42CR	108589	1	RELAY, 24 Volt (LWS latching) **(CE)**
59CCR	108589	1	RELAY, 24 Volt (Speed signal)
61CR-1	108589	1	RELAY, 24 Volt (Drive enable)
61CR-2	108589	1	RELAY, 24 Volt (Lift enable)
65CR	108589	1	RELAY, 24 Volt (Lift enable)
2H-13	105610	1	COIL, 24 Volt (Lowering)
2H-13-1	104493	1	COIL, 24 Volt (Holding)
2H-13-2	104493	1	COIL, 24 Volt (Holding)
2H-13-3	104493	1	COIL, 24 Volt (Holding)
2H-13-4	104493	1	COIL, 24 Volt (Holding)
2H-17A	103690	1	COIL, 24 Volt (Outrigger holding)
2H-21A	105610	1	COIL, 24 Volt (System dump)
3H-14F	105610	1	COIL, 24 Volt (Lift)
4H-23	103690	1	COIL, 24 Volt (Right steer - Vickers)
	128320	1	COIL, 24 Volt (Right steer - Hytos)

Parts list continued on the following page.

3.4 Electrical Component Parts List

Index No.	Skyjack Part No.	Qty.	Description
			Parts list continued from the previous page.
4H-24	107439	1	COIL, 24 Volt (Left steer - Vickers)
	128320	1	COIL, 24 Volt (Left steer - Hytos)
4H-26	107439	1	COIL, 24 Volt (Platform extend - Vickers)
	128320	1	COIL, 24 Volt (Platform extend - Hytos)
4H-27	107439	1	COIL, 24 Volt (Platform retract - Vickers)
	128320	1	COIL, 24 Volt (Platform retract - Hytos)
4H-71	103605	1	COIL, 24 Volt (Left front outrigger retract)
4H-72	103605	1	COIL, 24 Volt (Right front outrigger retract)
4H-73	103605	1	COIL, 24 Volt (Right rear outrigger retract)
4H-74	103605	1	COIL, 24 Volt (Left rear outrigger retract)
4H-75	103605	1	COIL, 24 Volt (Left front outrigger extend)
4H-76	103605	1	COIL, 24 Volt (Right front outrigger extend)
4H-77	103605	1	COIL, 24 Volt (Right rear outrigger extend)
4H-78	103605	1	COIL, 24 Volt (Left rear outrigger extend)
AT1	130440	1	TRANSDUCER, Angle **(CE)**
B1-B8	106552	8	BATTERY, 6 Volt (Trojan U-2500)
BCI	103240	1	BATTERY CHARGE INDICATOR
BC-1	129685	1	CHARGER, Battery (48VDC)
BP29	103057	1	BEEPER **(CE)**
BP29A	103057	1	BEEPER (LWS)
C10B-1	121527	1	CONTACTOR (Pump/Traction)
C10B-2	119169	1	CONTACTOR (Line)
C15A	119170	1	CONTACTOR (Reverse)
C16A	119170	1	CONTACTOR (Forward)
C18A	119168	1	CONTACTOR (Pump)
CAP1	110699	1	CAPACITOR (.47uF 50 Volts)
CB1	117326	1	BREAKER, Circuit (20 Amp) (Ground)
CB2	117325	2	BREAKER, Circuit (15 Amp) (48V)
CB3	117326	1	BREAKER, Circuit (20 Amp) (24V)
CM1	130439	1	MODULE, Load sensing control **(CE)**
D02-X	129258	AR	DIODE
DCM1	801992	1	TRACTION MOTOR
DCM2	118995	1	MOTOR (48 volt)
DPM1	118815	1	MODULE, Delayed power
DR1	121557	1	SUPPRESSION ASSEMBLY (50W 1W resistor & 1A (1N4007) diode)
DR1	121557	1	SUPPRESSION ASSEMBLY (50W 1W resistor & 1A (1N4007) diode)
DR2	121557	1	SUPPRESSION ASSEMBLY (50W 1W resistor & 1A (1N4007) diode)
DR3	121557	1	SUPPRESSION ASSEMBLY (50W 1W resistor & 1A (1N4007) diode)
DXX	102921	AR	DIODE
EB25	121065	1	COIL, Brake Assembly
			Parts list continued on the following page.

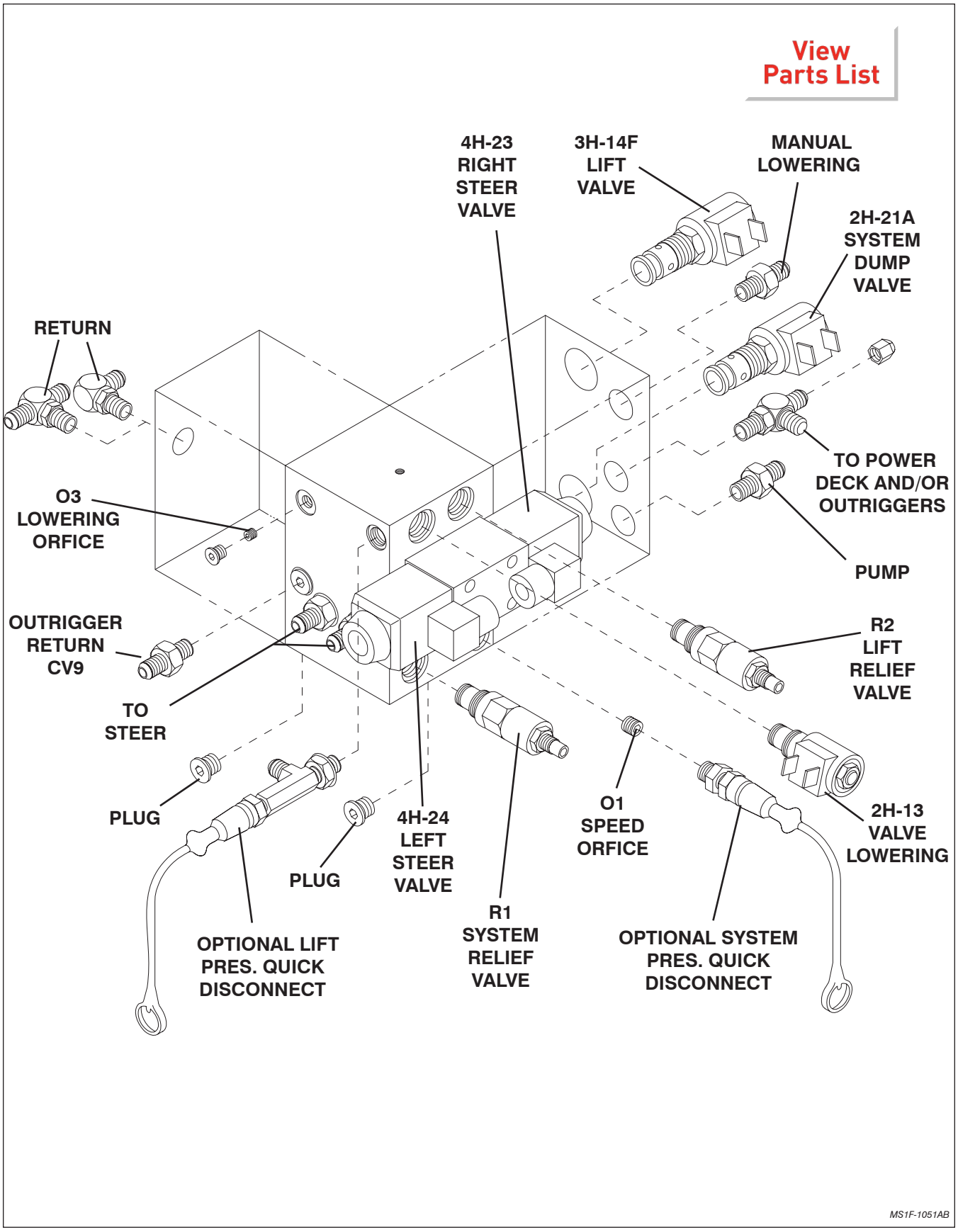
3.4 Electrical Component Parts List (Continued)

Index No.	Skyjack Part No.	Qty.	Description
			Parts list continued from the previous page.
F1	120658	1	FUSE, 10 Amp (Drive circuit)
F2	120658	1	FUSE, 10 Amp (Power platform)
F3	120658	1	FUSE, 10 Amp (Lift circuit)
F4	120658	1	FUSE, 10 Amp (Outrigger control)
F5	120658	1	FUSE, 10 Amp (Chassis)
F12	120658	1	FUSE, 10 Amp (Center tap)
F13	117619	1	FUSE, 300 Amp (Main)
F14	119469	1	FUSE, 200 Amp (Pump contactor)
F15	121556	1	FUSE, 15 Amp
F16	120658	1	FUSE, 10 Amp
FL22	121477	1	LIGHT, Flashing
FL22A	103743	1	FLASHER
H1	121058	1	HORN
INV1	124755	1	INVERTER (120V @ 60 Hz 1500 Watt) **(ANSI/CSA)**
	124756	1	INVERTER (110/220V @ 50 Hz 1500 Watt) **(CE)**
JS1	126024	1	DRIVE/STEER CONTROLLER
LCR-1	119156	1	CONTROL RELAY(inside charger)
LS1	117081	1	LIMIT SWITCH (Brake Interlock)
LS2	102758	1	LIMIT SWITCH (Gate)
LS3	120814	1	LIMIT SWITCH (Drive cut-out limit)
LS4	121392	1	LIMIT SWITCH (End of stroke)
LS5	120691	1	LIMIT SWITCH (High speed cut-out) **(ANSI/CSA)**
	120690	1	LIMIT SWITCH (High speed cut-out) **(CE)**
LS6	120887	1	LIMIT SWITCH (Power platform)
LS61	115652	1	LIMIT SWITCH (Outrigger left/front)
LS62	115652	1	LIMIT SWITCH (Outrigger right/front)
LS63	115652	1	LIMIT SWITCH (Outrigger right/rear)
LS64	115652	1	LIMIT SWITCH (Outrigger left/rear)
LS65	115658	1	LIMIT SWITCH (Outrigger left/front)
LS66	115658	1	LIMIT SWITCH (Outrigger right/front)
LS67	115658	1	LIMIT SWITCH (Outrigger right/rear)
LS68	115658	1	LIMIT SWITCH (Outrigger left/rear)
LS7	120887	1	LIMIT SWITCH (Extension platform)
PT1	134432	1	TRANSDUCER, Pressure (3000 psi) **(CE)**
S1	119725	1	SWITCH, Battery disconnect
S4	147053	1	N.C. CONTACT (Emergency stop) (Base control console) **(CE)**
S5	147057	1	SWITCH, Off/Platform/Base (Base control console)
S6	147069	1	SWITCH, Up/Down selector (Base control console)
S7	147053	1	N.C. CONTACT (Emergency stop) (Platform control console)
S8	147054	1	N.O. CONTACT (Base/Off/Platform) (Platform control console)
S9	116382	1	SWITCH, Lift/Off/Drive (Platform control console)
			Parts list continued on the following page.

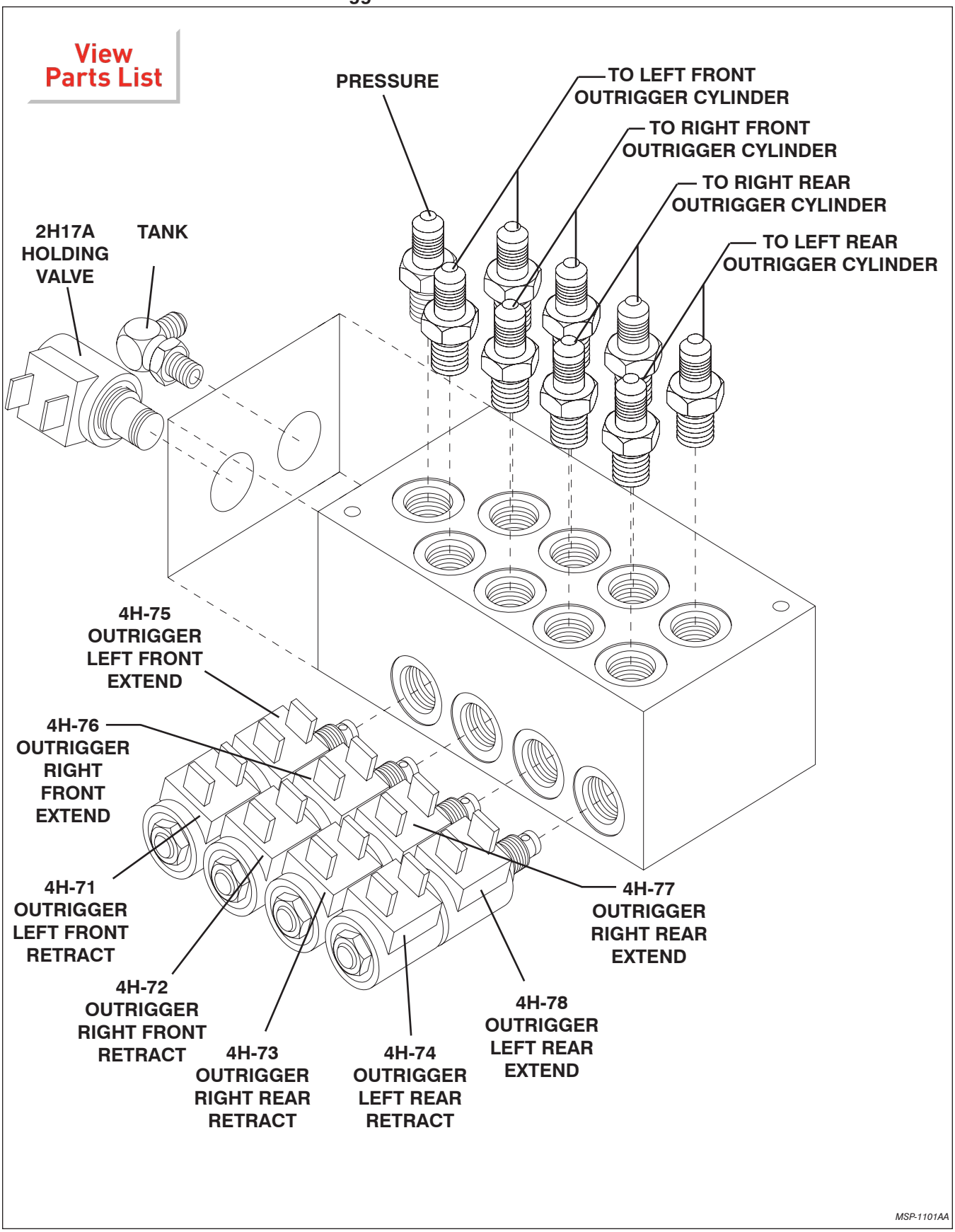
3.4 Electrical Component Parts List (Continued)

Index No.	Skyjack Part No.	Qty.	Description
			Parts list continued from the previous page.
S11	147054	1	N.O. CONTACT (Horn) (Platform control console)
S16	102853	1	SWITCH, Power platform enable (Extension platform control console)
S17	102853	1	SWITCH, Power platform extend/retract (Extension platform control console)
S19	103280	1	SWITCH, Lift enable (Outrigger)
S20	102853	1	SWITCH, Toggle (Outrigger left front)
S21	102853	1	SWITCH, Toggle (Outrigger right front)
S22	102853	1	SWITCH, Toggle (Outrigger right rear)
S23	102853	1	SWITCH, Toggle (Outrigger left rear)
SV1	120659	1	DRIVE SEVCON
TC1	121529	1	TACHOMETER CARD
TG1	700227	1	TACHOMETER GENERATOR
TMR-8A	137417	1	RELAY, Inverter Timer Cut-out
TS1	155814	1	SWITCH, Tilt
TT1	103336	1	HOURMETER
WL1	102671	1	LIGHT, Warning
X1	801347	1	SEVCON CONVERTOR
	121707	1	PENDANT, Remote steering

3.5 Main Manifold and Port Identifications



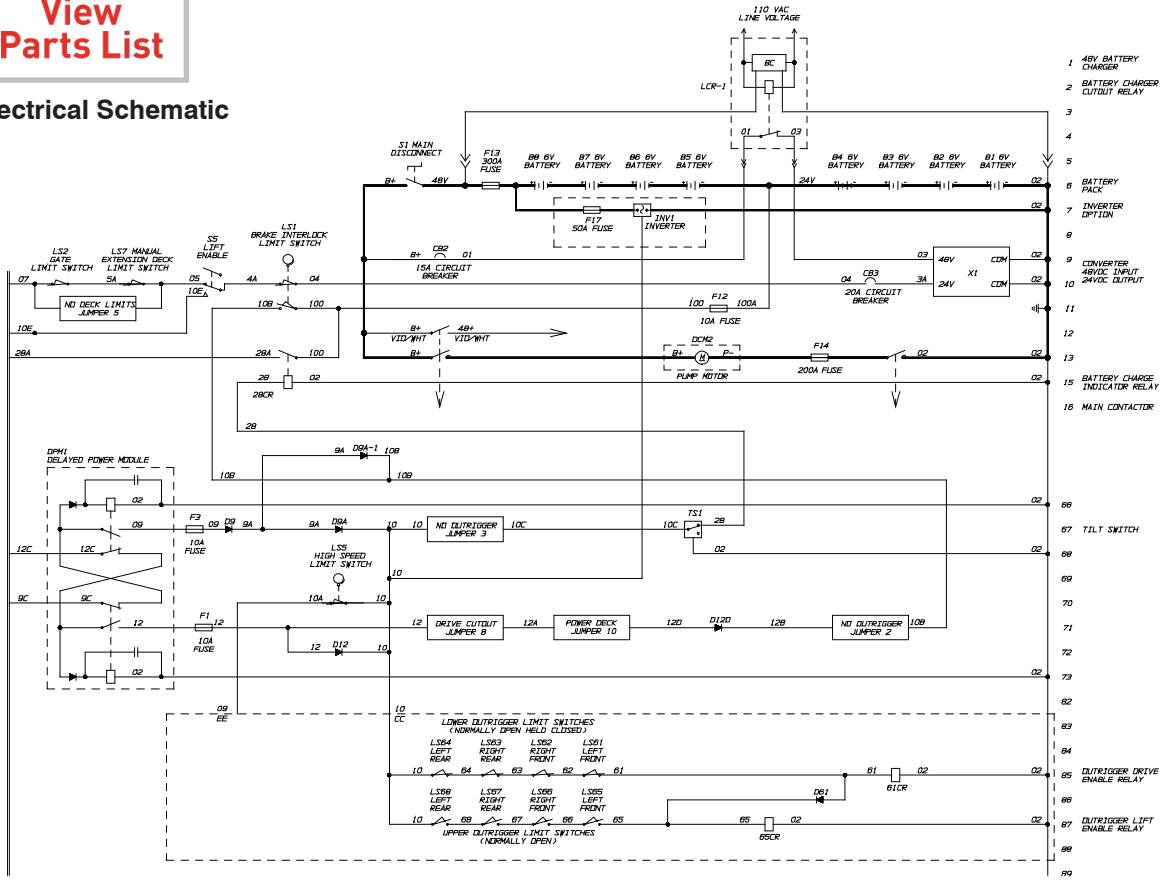
3.6 Outrigger Manifold and Port Identifications


View Parts List
PRESSURE
TO LEFT FRONT OUTRIGGER CYLINDER
TO RIGHT FRONT OUTRIGGER CYLINDER
TO RIGHT REAR OUTRIGGER CYLINDER
TO LEFT REAR OUTRIGGER CYLINDER
2H17A HOLDING VALVE
TANK
4H-75 OUTRIGGER LEFT FRONT EXTEND
4H-76 OUTRIGGER RIGHT FRONT EXTEND
4H-71 OUTRIGGER LEFT FRONT RETRACT
4H-72 OUTRIGGER RIGHT FRONT RETRACT
4H-73 OUTRIGGER RIGHT REAR RETRACT
4H-74 OUTRIGGER LEFT REAR RETRACT
4H-77 OUTRIGGER RIGHT REAR EXTEND
4H-78 OUTRIGGER LEFT REAR EXTEND
MSP-1101AA

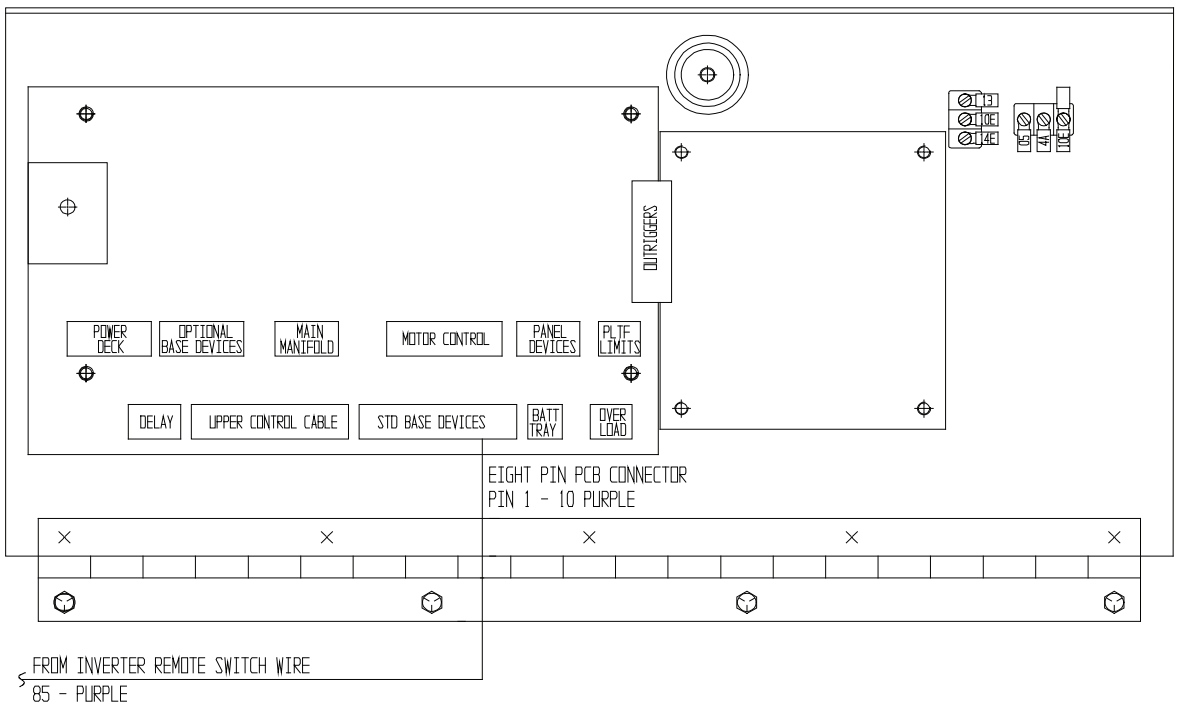
3.7 Electrical Inverter Option: Schematic & Panel Diagram (without timer cutout relay)

View Parts List

Electrical Schematic



Electrical Panel



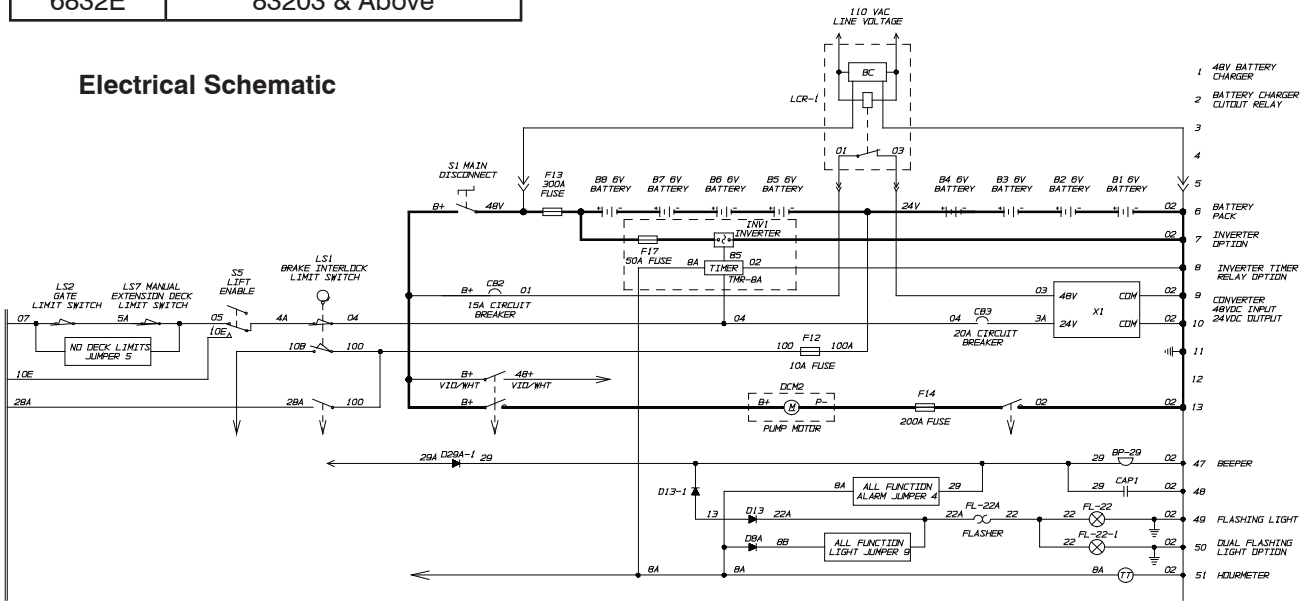
M50225AA M11200AA

3.8 Electrical Inverter Option: Schematic & Panel Diagram (ANSI/CSA - Equipped with timer cutout relay)

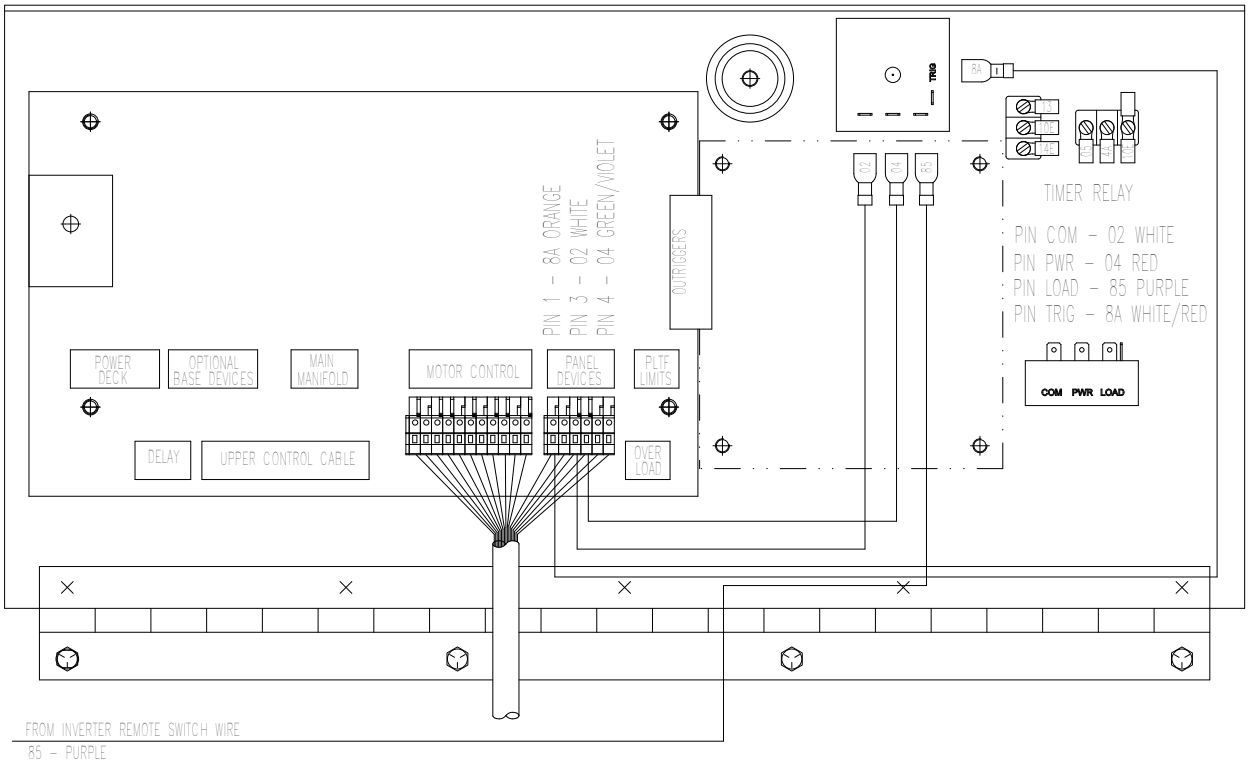
Serial Breakdown Reference Chart	
Model	Serial Number
6826E	78648 & Above
6832E	83203 & Above

View Parts List

Electrical Schematic



Electrical Panel



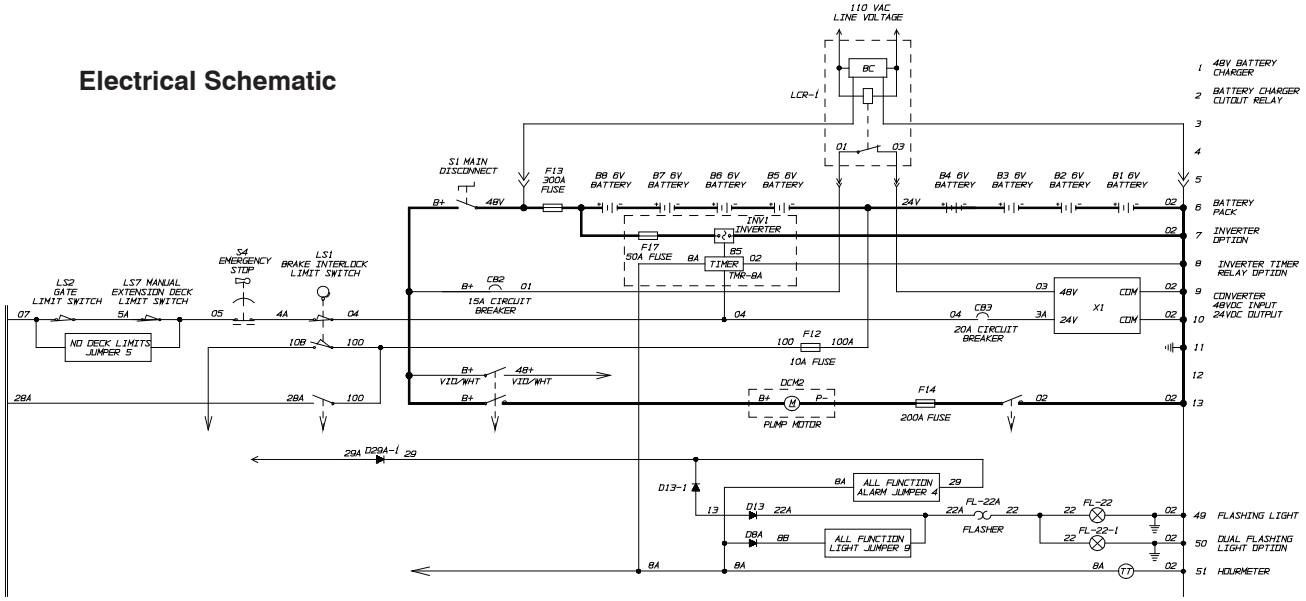
M50217AB M128610AC

3.9 Electrical Inverter Option: Schematic & Panel Diagram (CE - Equipped with timer cutout relay)

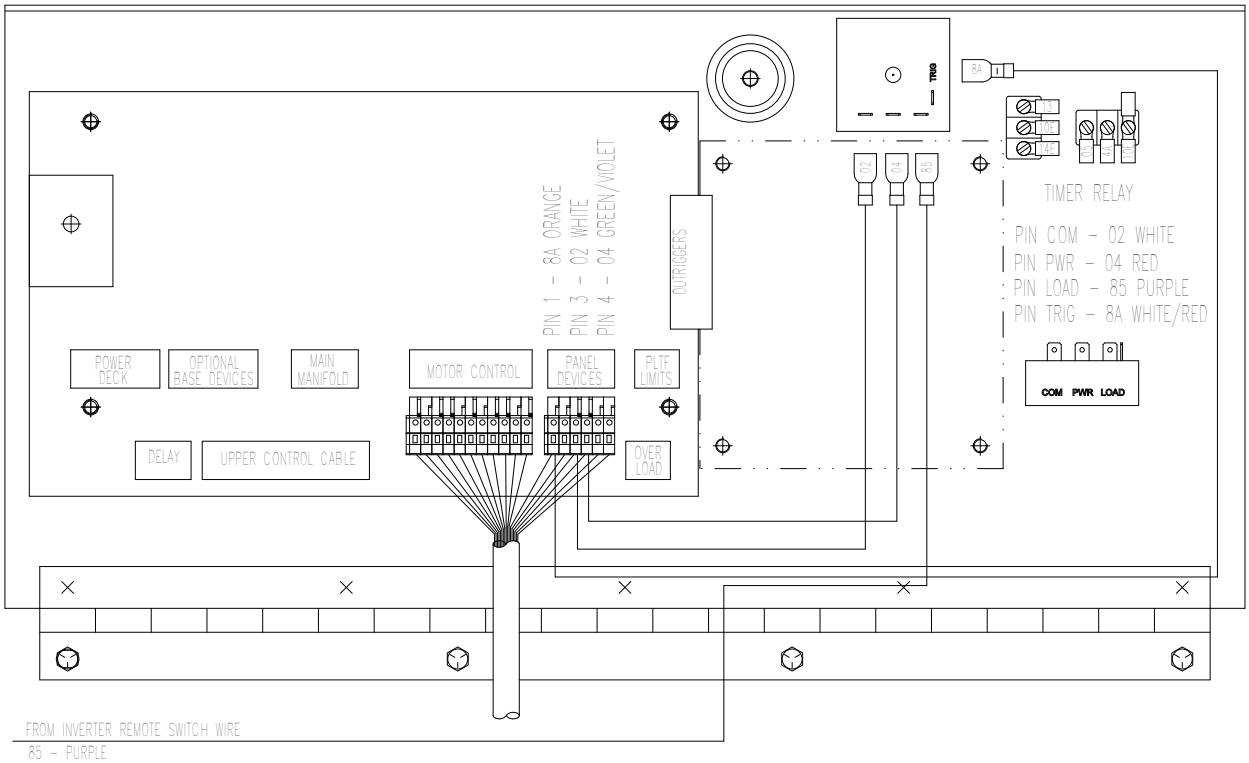
Serial Breakdown Reference Chart	
Model	Serial Number
6832E	83203 & Above

View Parts List

Electrical Schematic



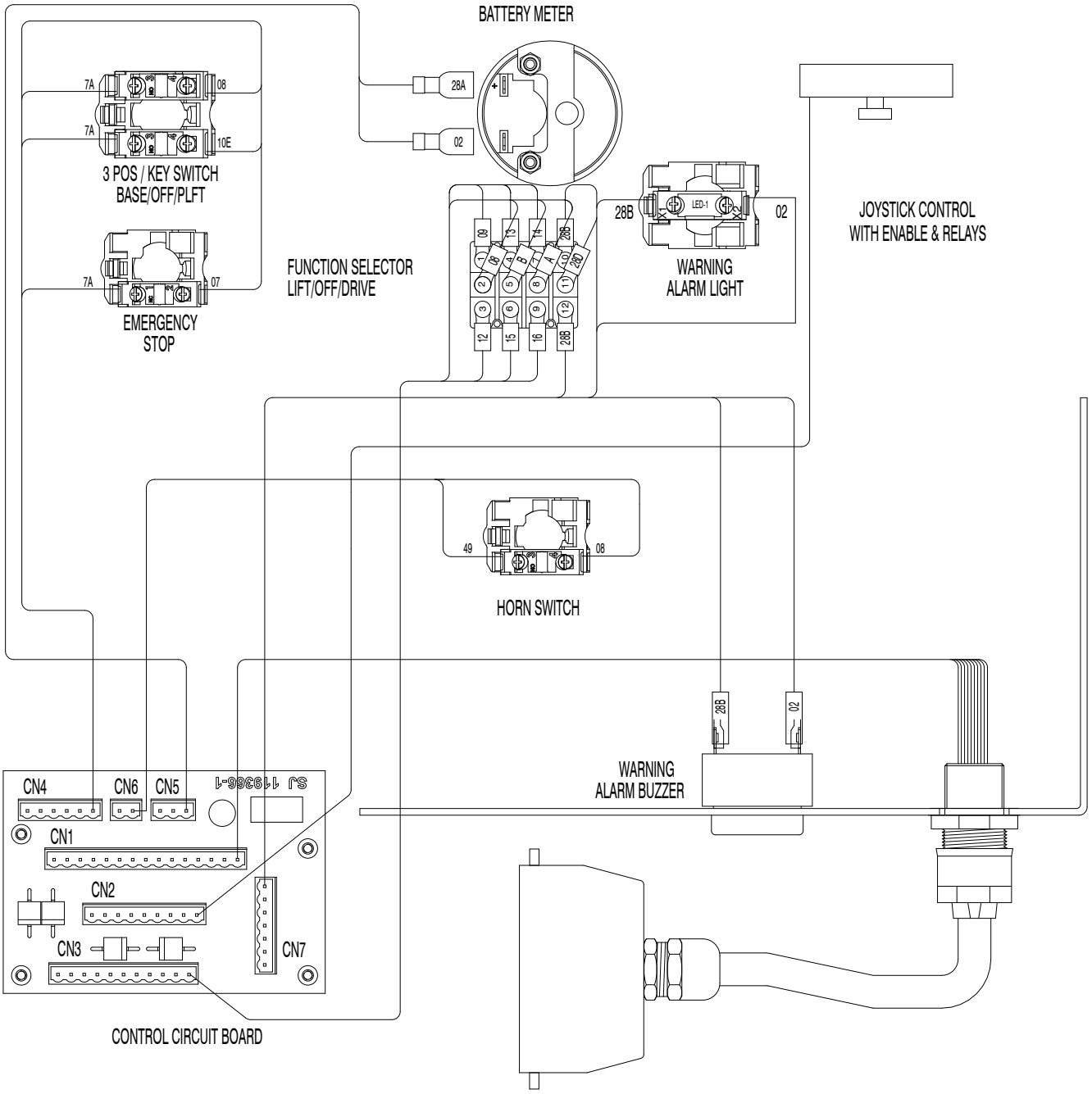
Electrical Panel



M50226AA M128610AC

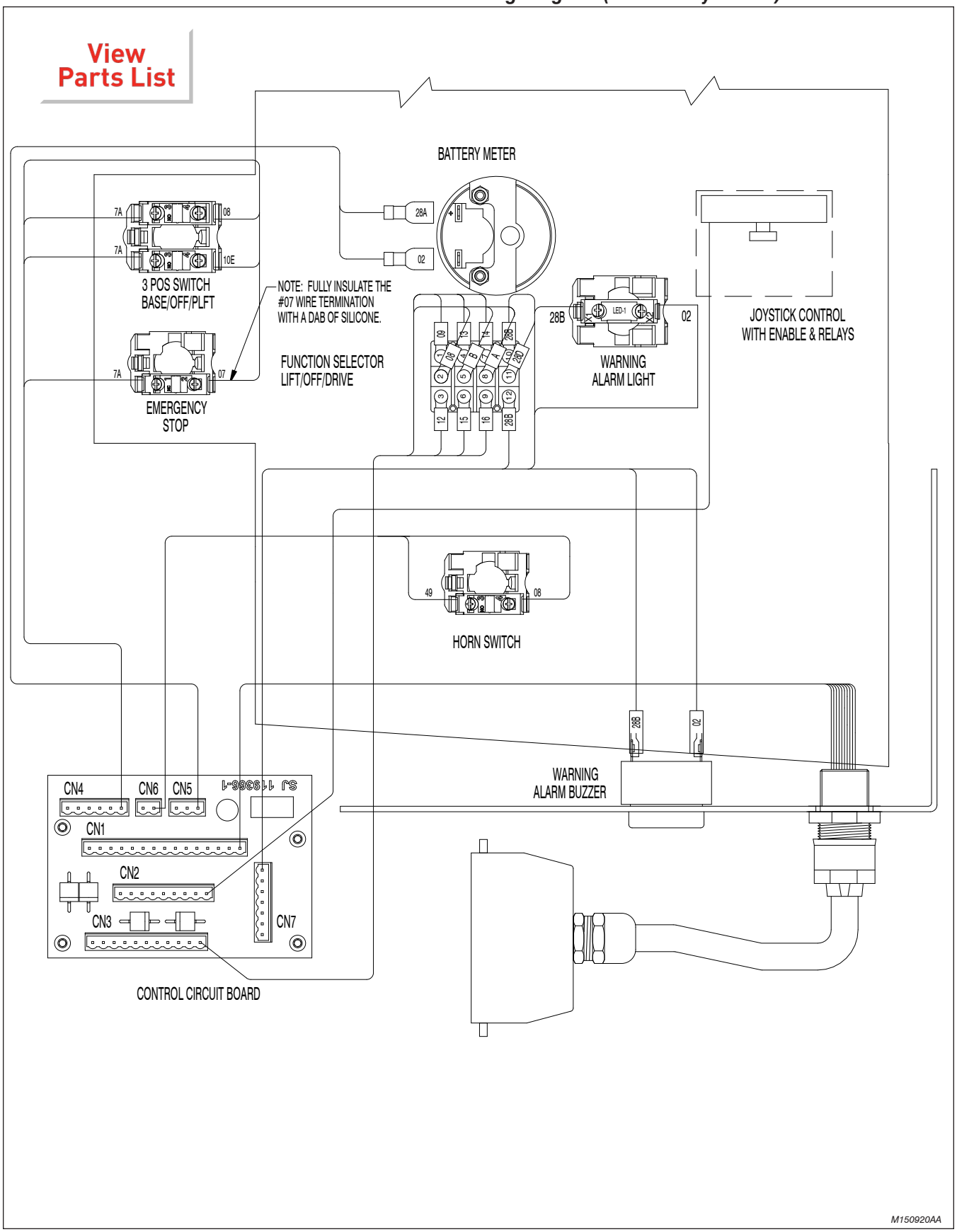
3.10 Platform Control Console Wiring Diagram (with key switch)

View Parts List

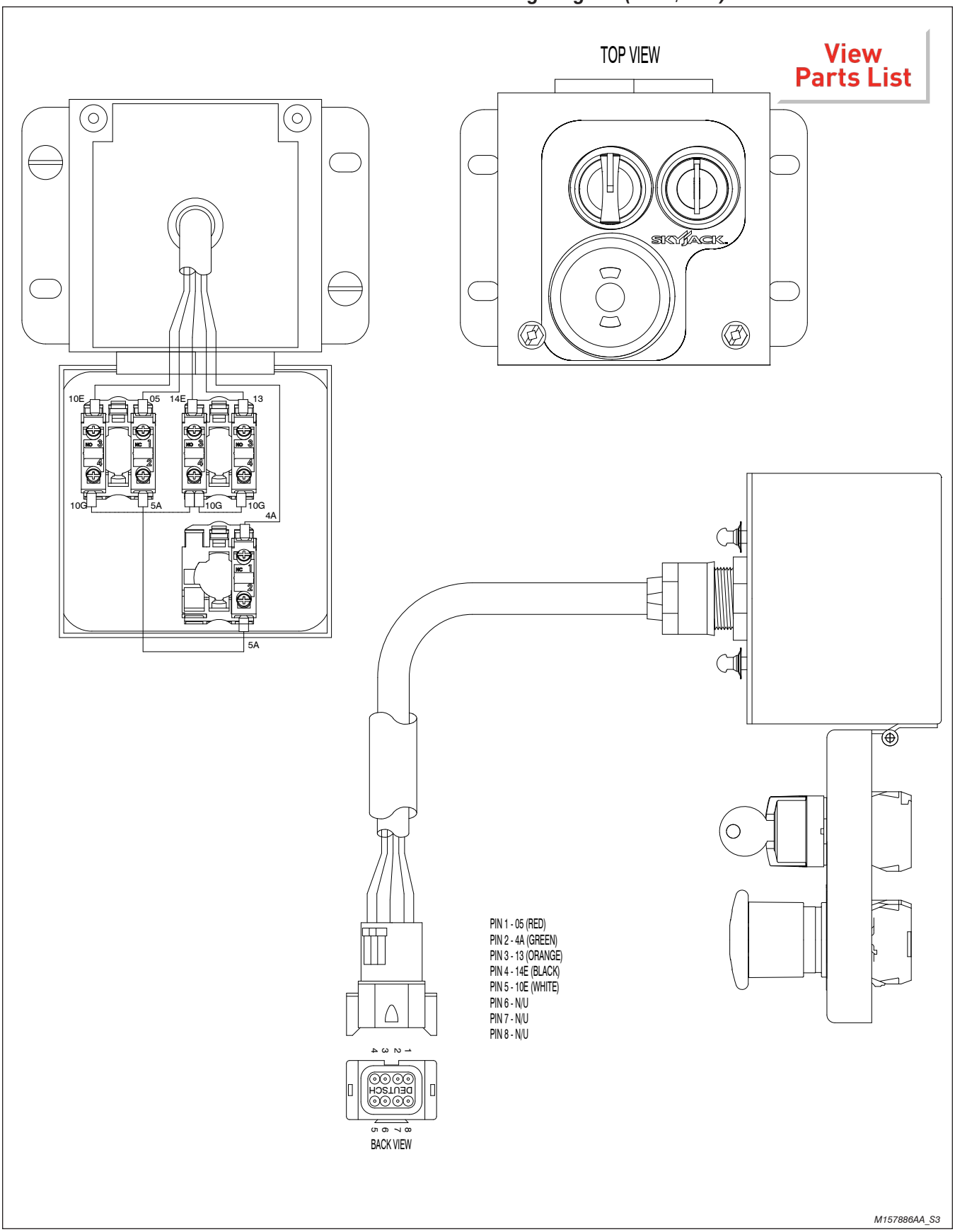


M150912AA1

3.11. Platform Control Console Wiring Diagram (without key switch)

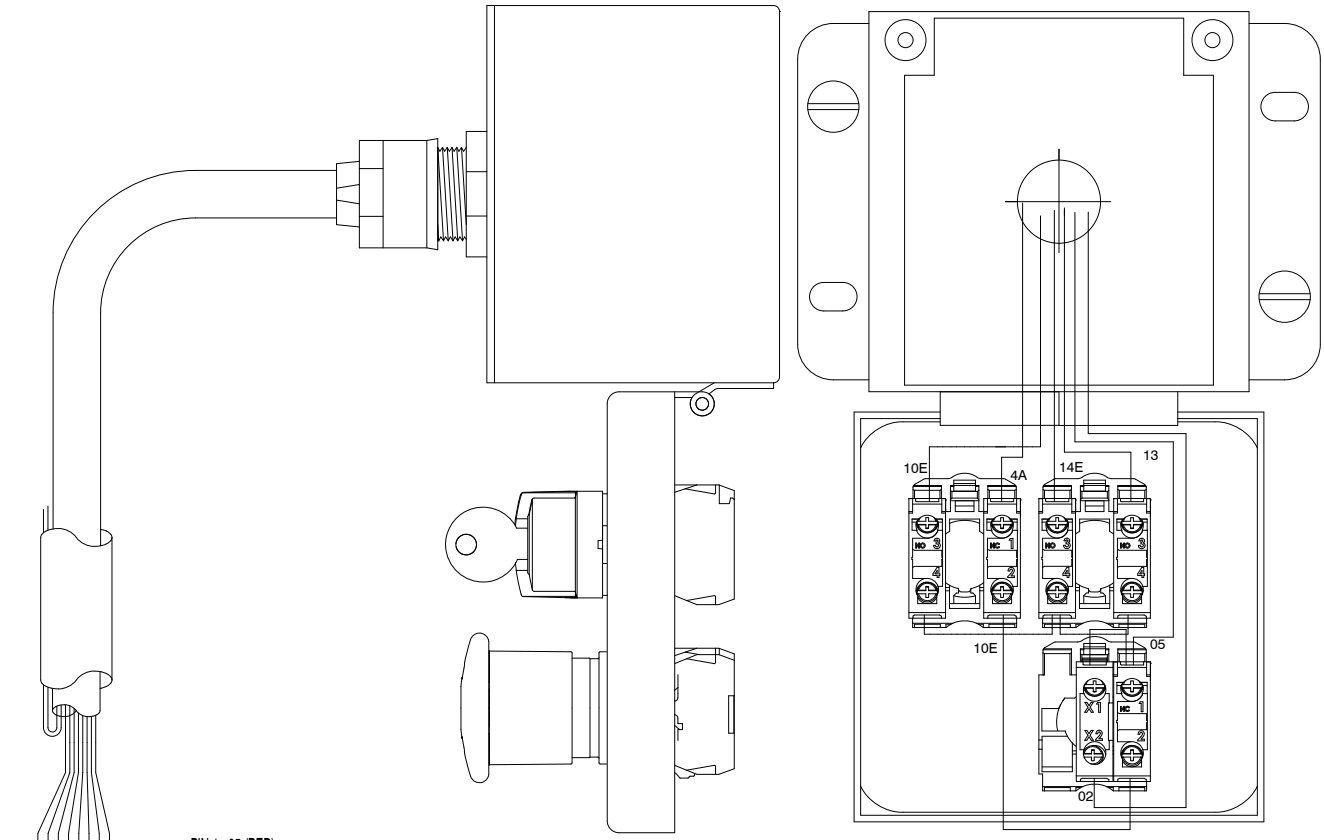


3.12. Base Control Console Wiring Diagram (ANSI/CSA)

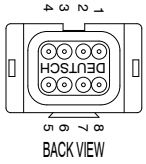


3.13 Base Control Console Wiring Diagram (CE)

View Parts List

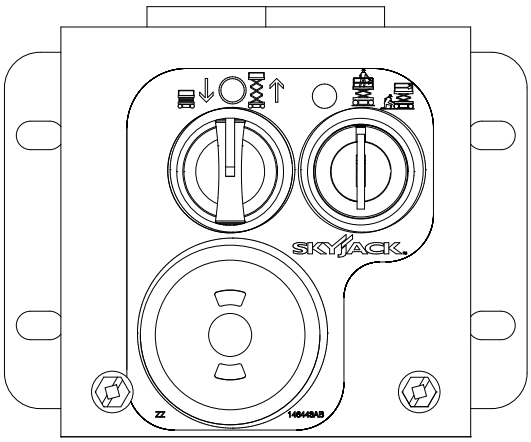


PIN 1 - 05 (RED)
PIN 2 - 4A (BLUE)
PIN 3 - 13 (ORANGE)
PIN 4 - 14E (BLACK)
PIN 5 - 10E (BLUE/BLACK)
PIN 6 - N/U
PIN 7 - N/U
PIN 8 - 02 (WHITE)



BACK VIEW

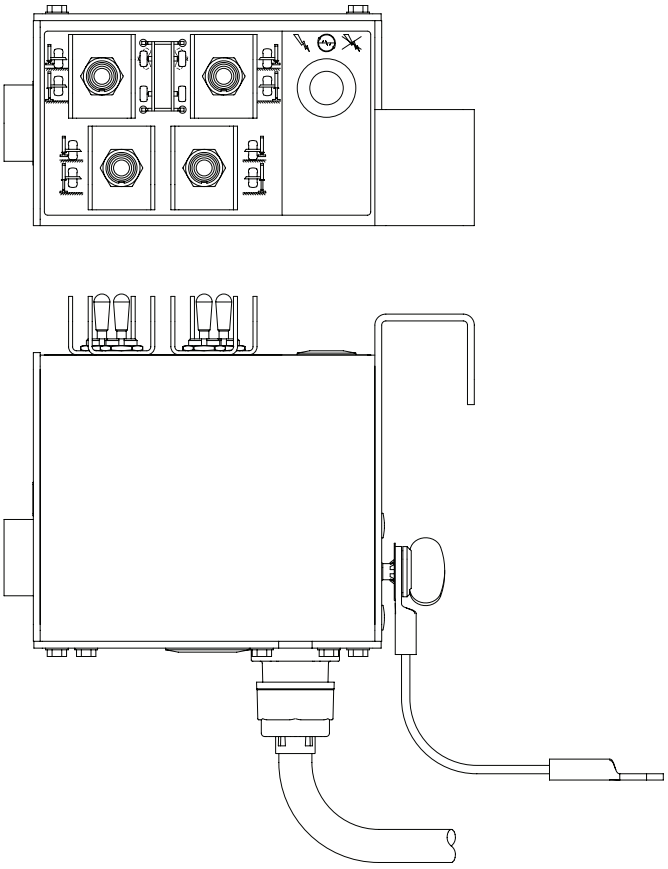
TOP VIEW

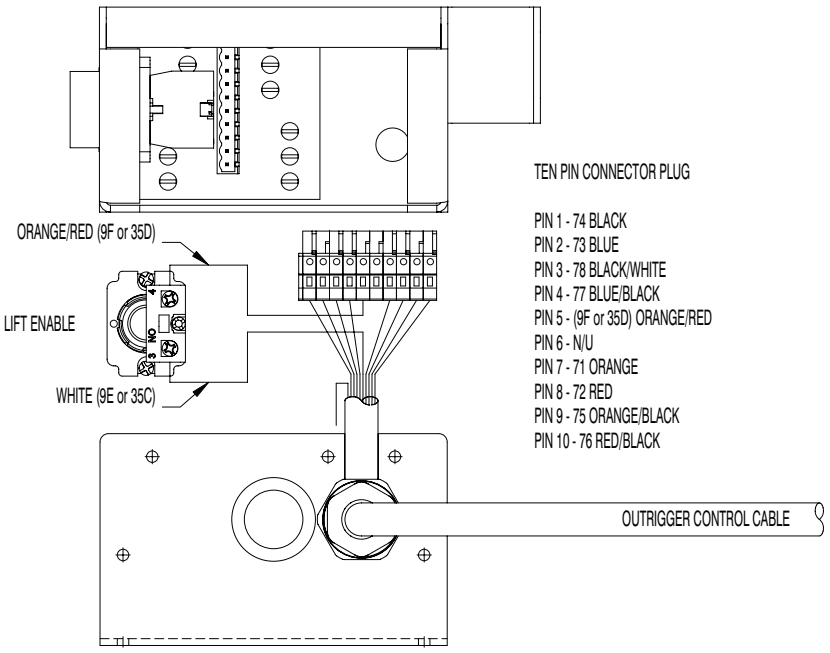


M156392AA

3.14 Outrigger Control Box Wiring Diagram (ANSI/CSA)

View Parts List





TEN PIN CONNECTOR PLUG

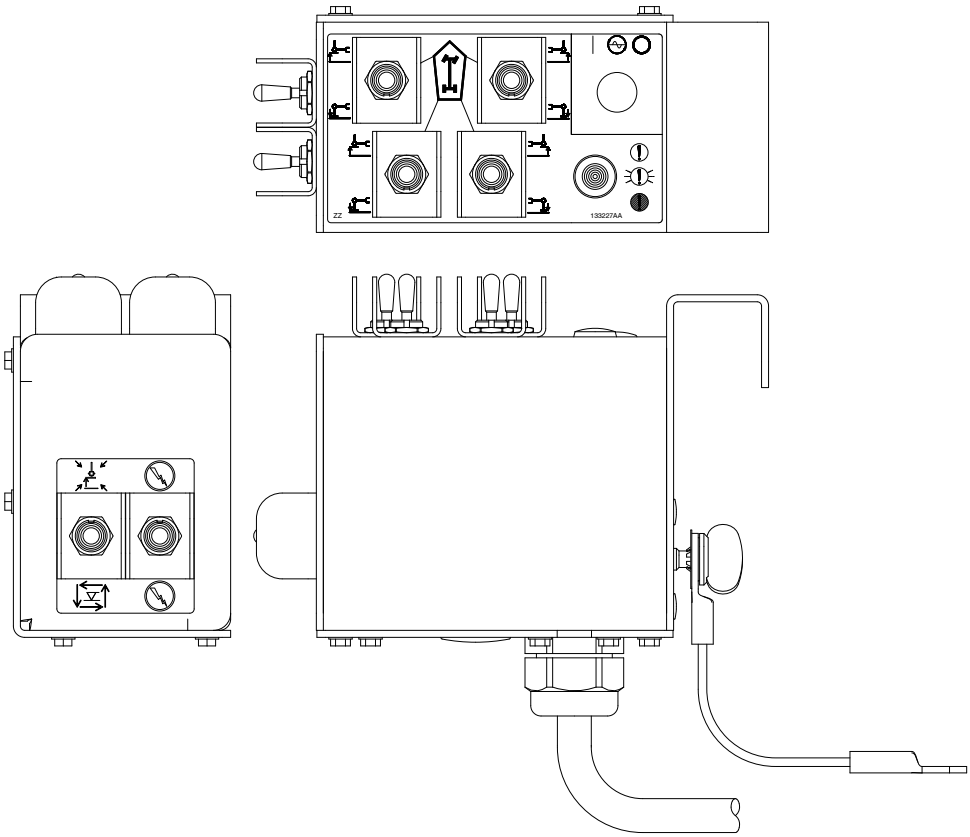
PIN 1 - 74 BLACK
PIN 2 - 73 BLUE
PIN 3 - 78 BLACK/WHITE
PIN 4 - 77 BLUE/BLACK
PIN 5 - (9F or 35D) ORANGE/RED
PIN 6 - N/U
PIN 7 - 71 ORANGE
PIN 8 - 72 RED
PIN 9 - 75 ORANGE/BLACK
PIN 10 - 76 RED/BLACK

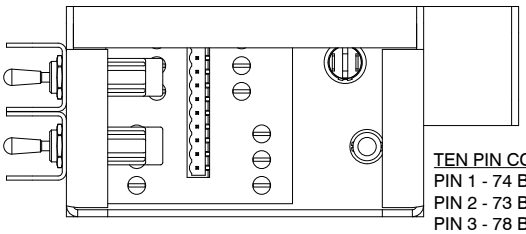
TO "ELECTRIC PANEL"
NINE PIN CONNECTOR PLUG
PIN 1 - 9E WHITE
PIN 2 - 78 BLACK/WHITE
PIN 3 - 73 BLUE
PIN 4 - 77 BLUE/BLACK
PIN 5 - 74 BLACK
PIN 6 - 71 ORANGE
PIN 7 - 75 ORANGE/BLACK
PIN 8 - 72 RED
PIN 9 - 76 RED/BLACK

M120266AD

3.15 Outrigger Control Box Wiring Diagram (CE)

View Parts List



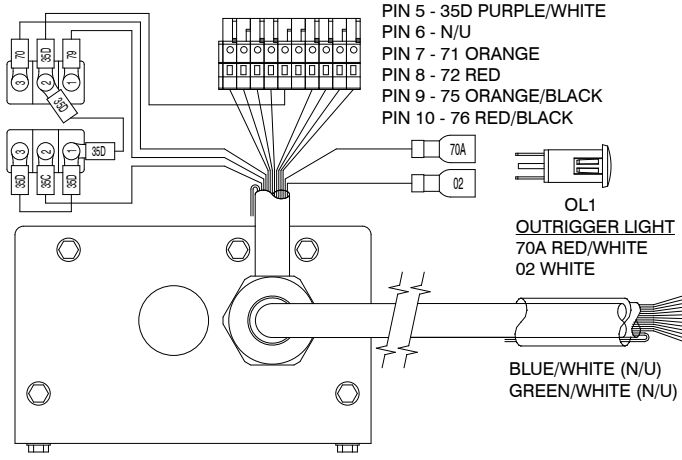


TEN PIN CONNECTOR PLUG
PIN 1 - 74 BLACK
PIN 2 - 73 BLUE
PIN 3 - 78 BLACK/WHITE
PIN 4 - 77 BLUE/BLACK
PIN 5 - 35D PURPLE/WHITE
PIN 6 - N/U
PIN 7 - 71 ORANGE
PIN 8 - 72 RED
PIN 9 - 75 ORANGE/BLACK
PIN 10 - 76 RED/BLACK

TO OUTRIGGER ELECTRICAL PANEL
PIN 1 - 02 WHITE
PIN 2 - 35C WHITE/BLACK
PIN 3 - 70 GREEN/BLACK
PIN 4 - 70A RED/BLACK
PIN 5 - 71 ORANGE
PIN 6 - 72 RED
PIN 7 - 73 BLUE
PIN 8 - 74 BLACK
PIN 9 - 75 ORANGE/BLACK
PIN 10 - 76 RED/BLACK
PIN 11 - 77 BLUE/BLACK
PIN 12 - 78 BLACK/WHITE
PIN 13 - 79 GREEN
PIN 14 - N/U
PIN 15 - N/U

S24
AUTO-LEVEL OUTRIGGER SWITCH
PIN 1 - 79 GREEN
PIN 2 - 35D PURPLE/WHITE
PIN 3 - 70 GREEN/BLACK

S9A
OUTRIGGER ENABLE SWITCH
PIN 1 - 35D PURPLE/WHITE
PIN 2 - 35C x 3 (WHITE/BLACK, BLUE/WHITE & GREEN/WHITE)
PIN 3 - 35D PURPLE/WHITE



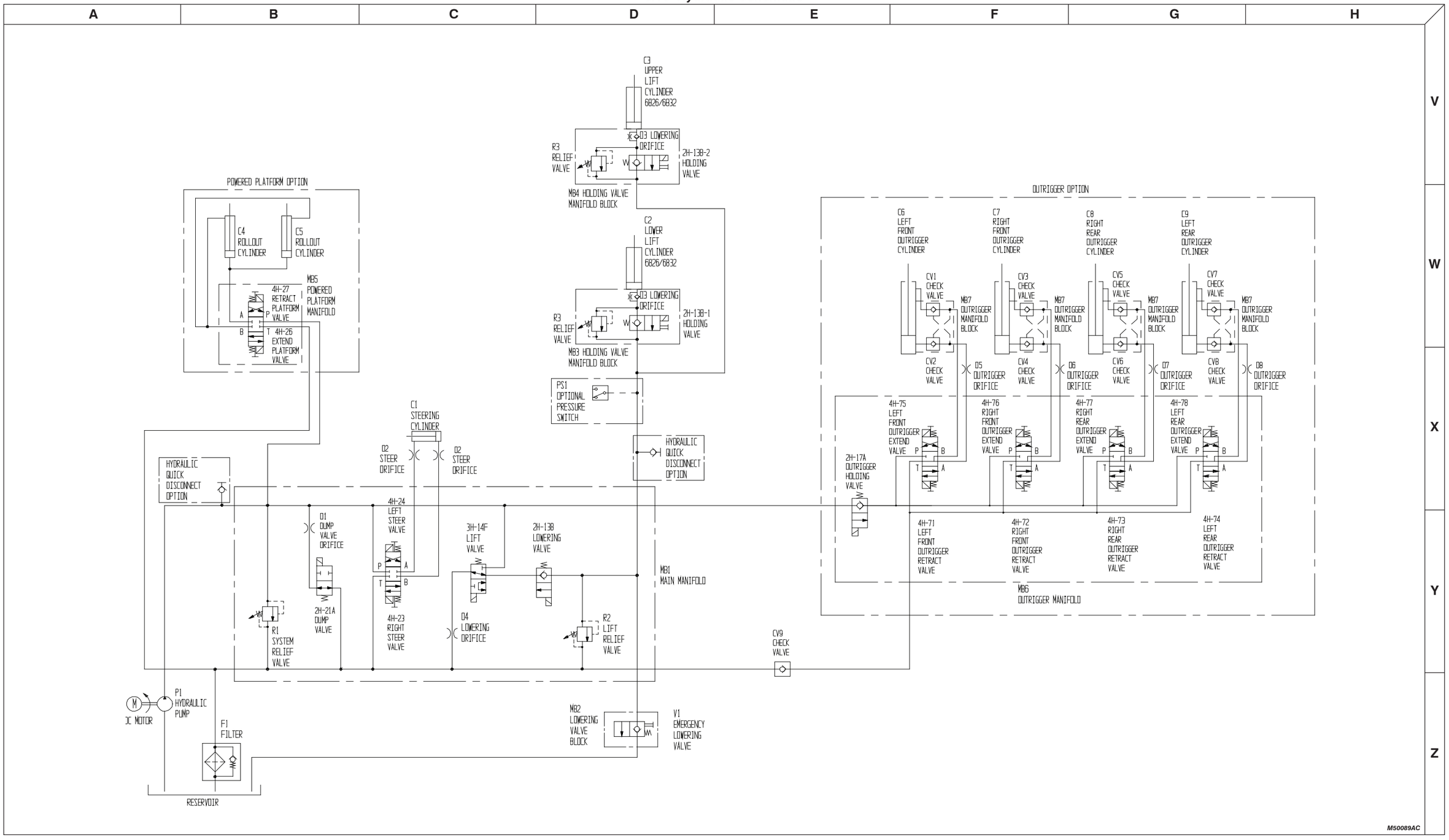
OL1
OUTRIGGER LIGHT
70A RED/WHITE
02 WHITE

BLUE/WHITE (N/U)
GREEN/WHITE (N/U)

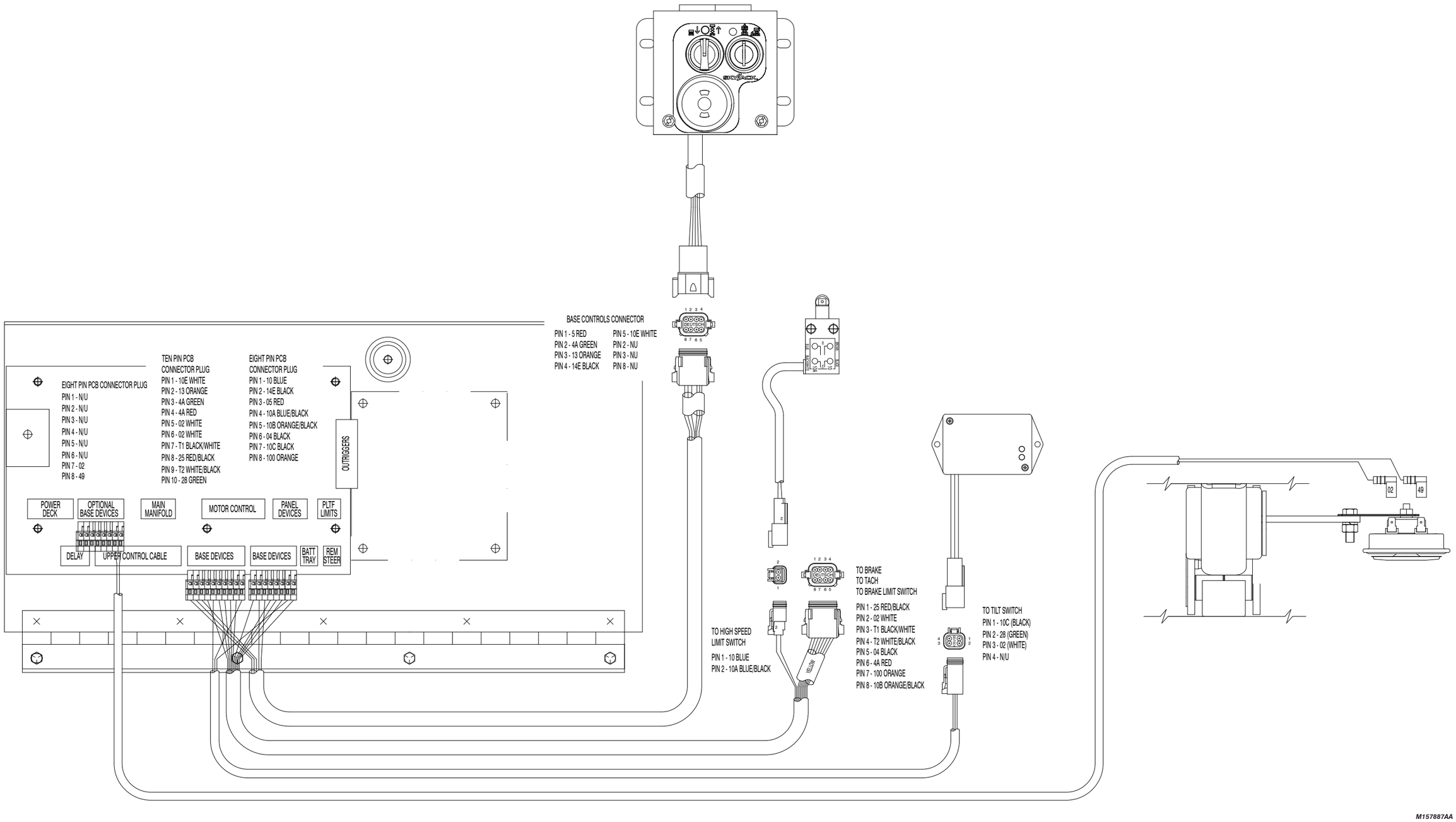
OUTRIGGER CONTROL CABLE

M129300AB2

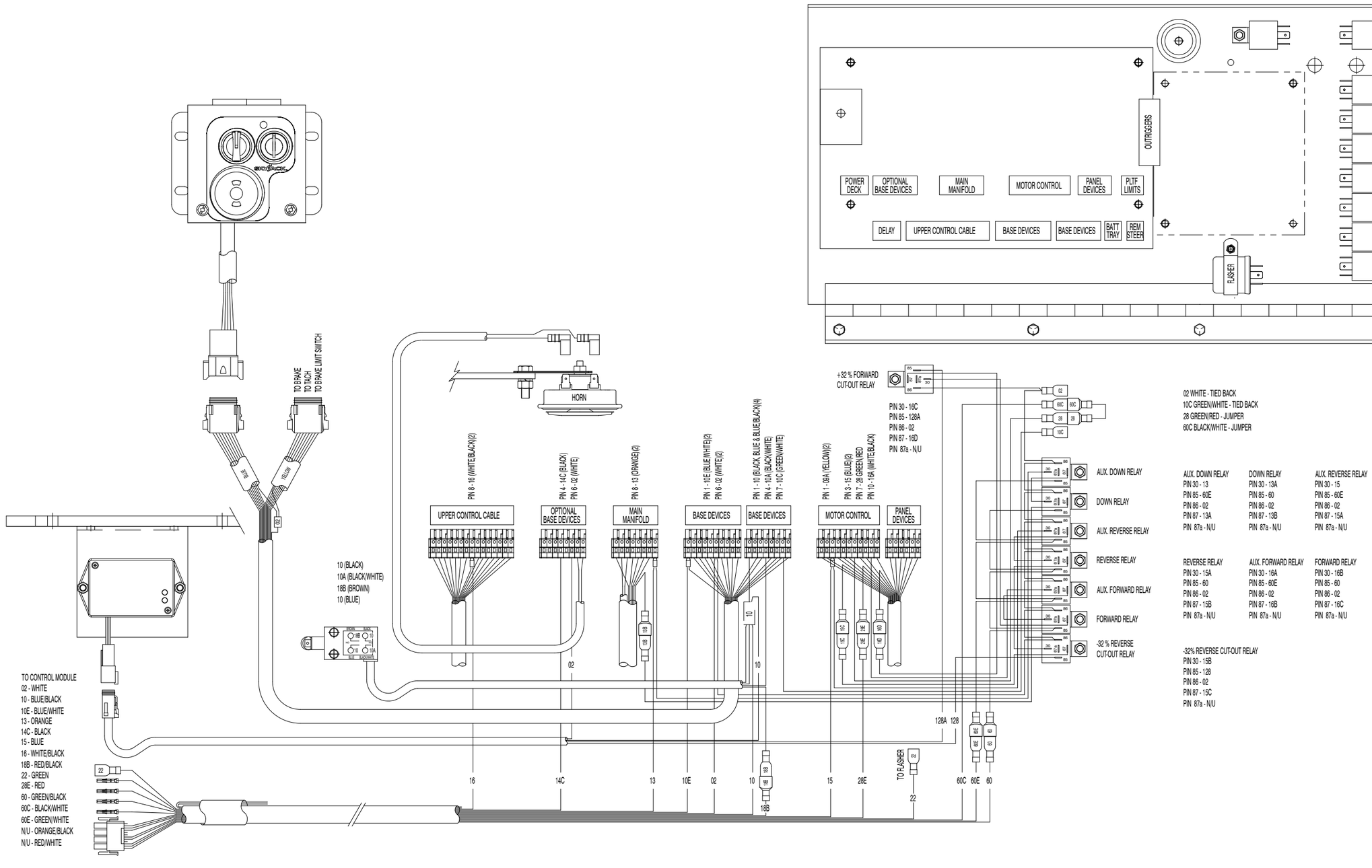
3.16 Hydraulic Schematic



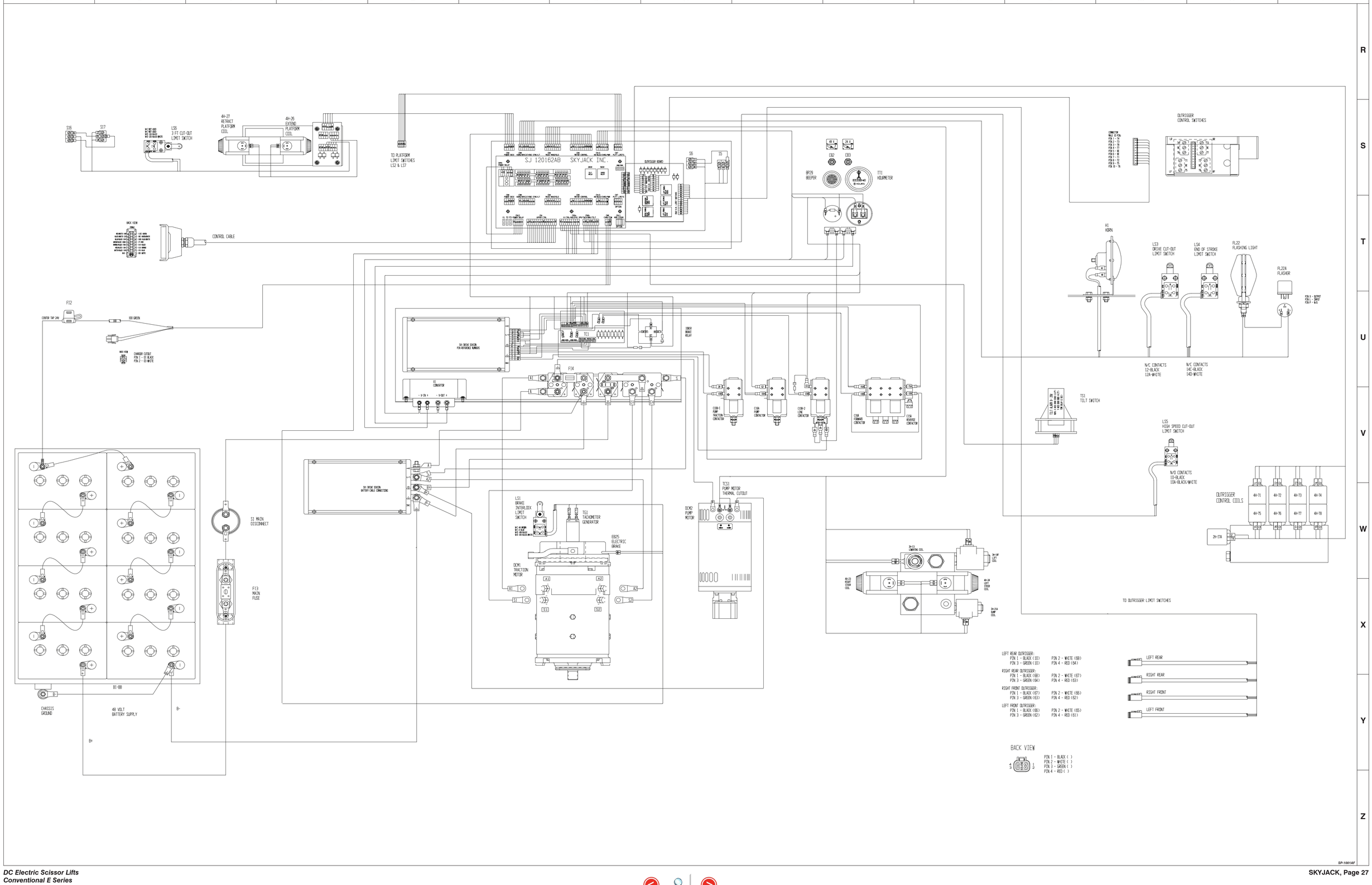
3.17 Base Devices Standard (ANSI/CSA)



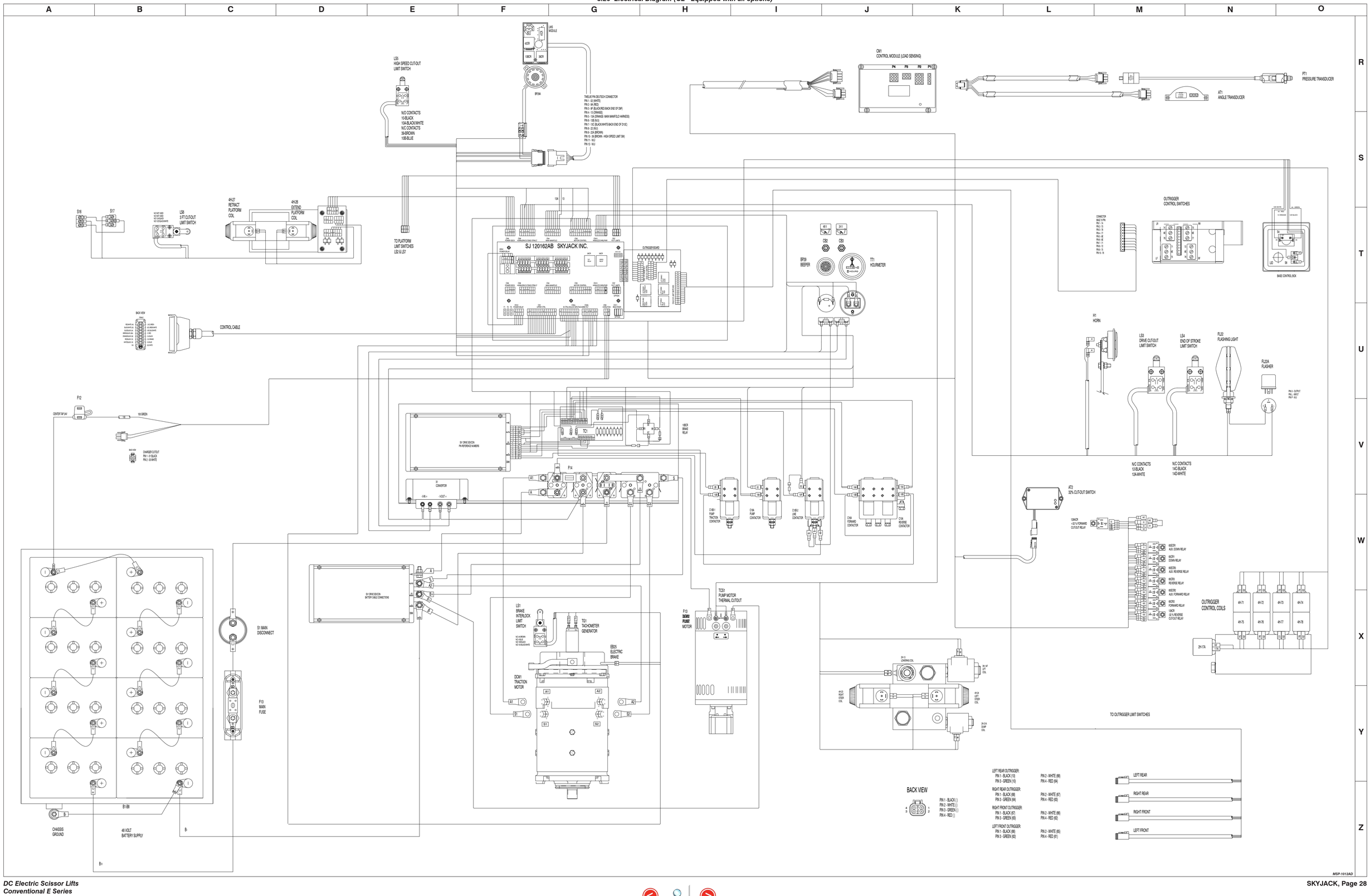
3.18 Base Devices Standard (CE)



3.19 Electrical Panel Diagram (ANSI/CSA - Equipped with all options)



3.20 Electrical Diagram (CE - Equipped with all options)



MSP-1012AD

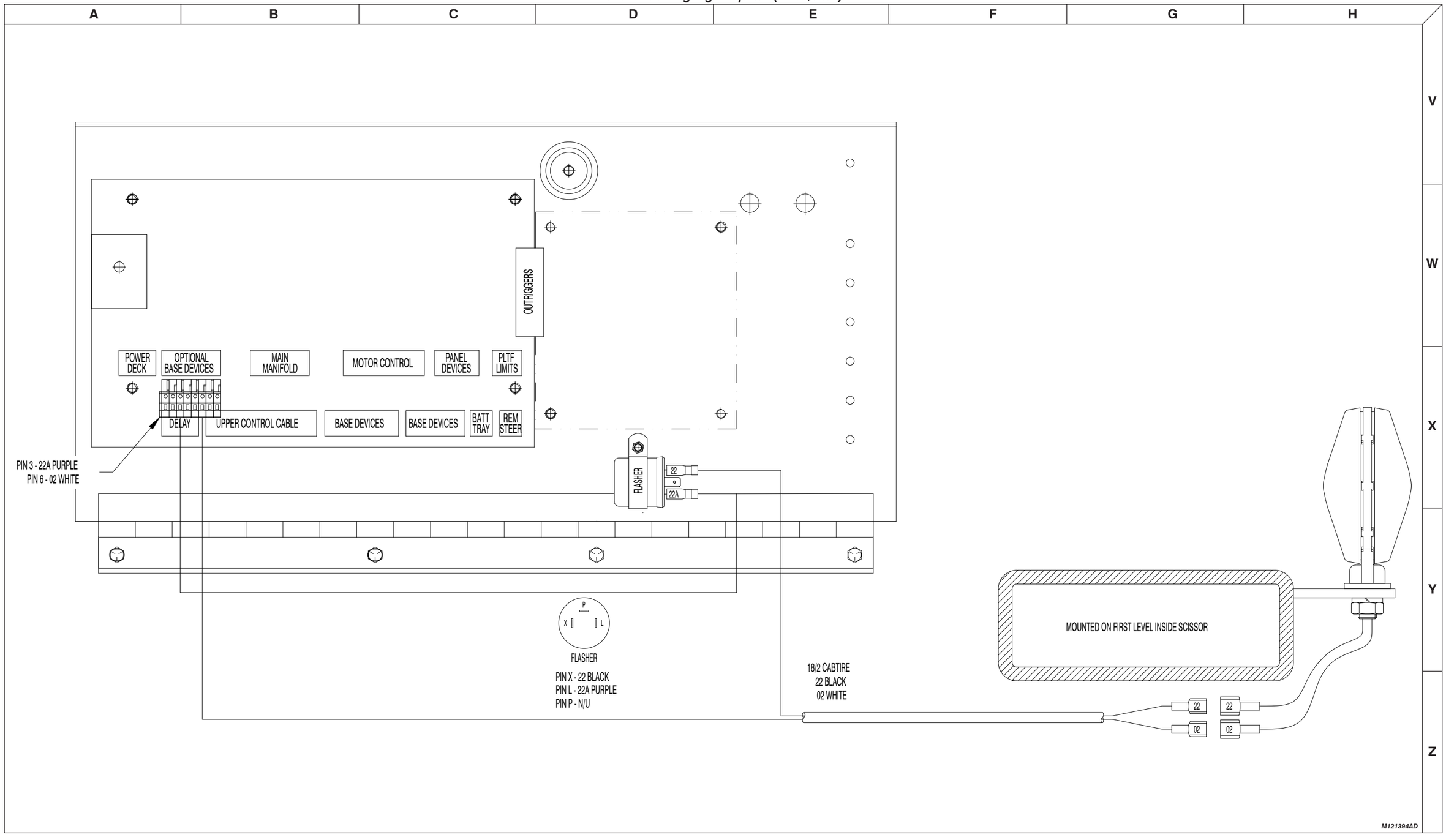
3.21 Electrical Schematic (ANSI/CSA - Equipped with all options)

A
B
C
D
E
F
G
H
I
J
K
L
M
N
O
R
S
T
U
V
W
X
Y
Z
48V BATTERY CHARGER
BATTERY CHARGER CUTOUT RELAY
BATTERY PACK
INVERTER OPTION
INVERTER OPTION TIMER
CONVERTER 48VDC INPUT 24VDC OUTPUT
PUMP CONTACTOR
BATTERY CHARGE INDICATOR RELAY
MAIN CONTACTOR
PUMP/TRACTION CONTACTOR
FORWARD CONTACTOR
BRAKE COIL
BRAKE RELAY
REVERSE CONTACTOR
BEEPER
FLASHING LIGHT
DUAL FLASHING LIGHT OPTION
HOURMETER
RESISTOR 2.7K OHMS
RIGHT SOLENOID
LEFT SOLENOID
SPEED SIGNAL RELAY
DUMP SOLENOID
UP SOLENOID
DOWN SOLENOID
HOLDING VALVE
HOLDING VALVE
TILT SWITCH
HORN
OUTRIGGER DRIVE ENABLE RELAY
OUTRIGGER LIFT ENABLE RELAY
OUTRIGGER POWER RELAY
OUTRIGGER SAFETY RELAY
OUTRIGGER LIFT DISABLE RELAY
OUTRIGGER HOLDING SOLENOID
L/F OUTRIGGER RETRACT SOLENOID
L/F OUTRIGGER EXTEND SOLENOID
R/F OUTRIGGER RETRACT SOLENOID
R/F OUTRIGGER EXTEND SOLENOID
R/R OUTRIGGER RETRACT SOLENOID
R/R OUTRIGGER EXTEND SOLENOID
L/R OUTRIGGER RETRACT SOLENOID
L/R OUTRIGGER EXTEND SOLENOID
LCR-1
110 VAC LINE VOLTAGE
B1 6V BATTERY
B2 6V BATTERY
B3 6V BATTERY
B4 6V BATTERY
B5 6V BATTERY
B6 6V BATTERY
B7 6V BATTERY
B8 6V BATTERY
F13 300A FUSE
F17 50A FUSE
TIMER
X1
CB3 20A CIRCUIT BREAKER
F12 10A FUSE
F14 200A FUSE
F5 10A FUSE
DCM2 PUMP MOTOR
TG1 TACHOMETER GENERATOR
ARMATURE
FIELD
DCM1 TRACTION MOTOR
S1 MAIN DISCONNECT
CB2 15A CIRCUIT BREAKER
J2 - 10 WAY CONNECTOR
TABS
15A FUSE
10A FUSE
J1 - 16 WAY CONNECTOR
TC1 - TACHOMETER CARD
17 WAY CONNECTOR
SV1 - SEVCON DRIVE
ALL FUNCTION ALARM JUMPER 4
ALL FUNCTION LIGHT JUMPER 9
FLASHER
PUMP MOTOR THERMAL CUTOUT
THERMAL CUTOUT JUMPER 12
END OF STROKE JUMPER 7
NO OUTRIGGER JUMPER 1
NO OUTRIGGER JUMPER 2
NO OUTRIGGER JUMPER 3
POWER DECK JUMPER 10
DRIVE CUTOUT JUMPER 8
H1 HORN
LOWER OUTRIGGER LIMIT SWITCHES (NORMALLY OPEN HELD CLOSED)
UPPER OUTRIGGER LIMIT SWITCHES (NORMALLY OPEN)
LS61 LEFT FRONT
LS62 RIGHT FRONT
LS63 RIGHT REAR
LS64 LEFT REAR
LS65 LEFT FRONT
LS66 RIGHT FRONT
LS67 RIGHT REAR
LS68 LEFT REAR
LS5 HIGH SPEED LIMIT SWITCH N.C.
LS1 BRAKE INTERLOCK LIMIT SWITCH
S4 EMERGENCY STOP KEY
S5 IDLE/PLTF/BASE ENABLE KEY SWITCH (IN IDLE POSITION)
NO DECK LIMITS JUMPER 5
JUMPER 11 REMOVED
STEERING PENDANT OPTION
S6 UP/DOWN SWITCH
DPM1 DELAYED POWER MODULE
F3 10A FUSE
F1 10A FUSE
F2-1 10A FUSE
F2-2 10A FUSE
CRD1
CRD2
CRD3
S7 EMERGENCY STOP
BCI BATTERY CHARGE INDICATOR
220uF CAPACITOR
0.47uF CAPACITOR
BP-28B BEEPER
WL1 TROUBLE LIGHT
S9 LIFT/OFF/DRIVE SWITCH
2.7K OHMS
S8 BASE/OFF/PLATFORM KEY SWITCH
JS1 CONTROLLER
REVERSE
FORWARD
ENABLE
RIGHT
LEFT
S11 HORN SWITCH
POWERED PLATFORM OPTION
LS6 POWER DECK LIMIT SWITCH N.C. (3FT CUTOUT)
S16 ENABLE SWITCH
S17 EXTEND/RETRACT SWITCH
EXTEND SOLENOID
RETRACT SOLENOID
S19 OUTRIGGER ENABLE
S20 LEFT FRONT
S21 RIGHT FRONT
S22 RIGHT REAR
S23 LEFT REAR
RETRACT
EXTEND
RED
BLUE/WHITE
GREEN/BLACK
RED/BLACK
BLUE
WHITE/BLACK
ORANGE/BLACK
BLACK/WHITE
BLUE/BLACK
WHITE
BLACK
ORANGE
GREEN
GREEN/WHITE
RED/WHITE
M132108AC

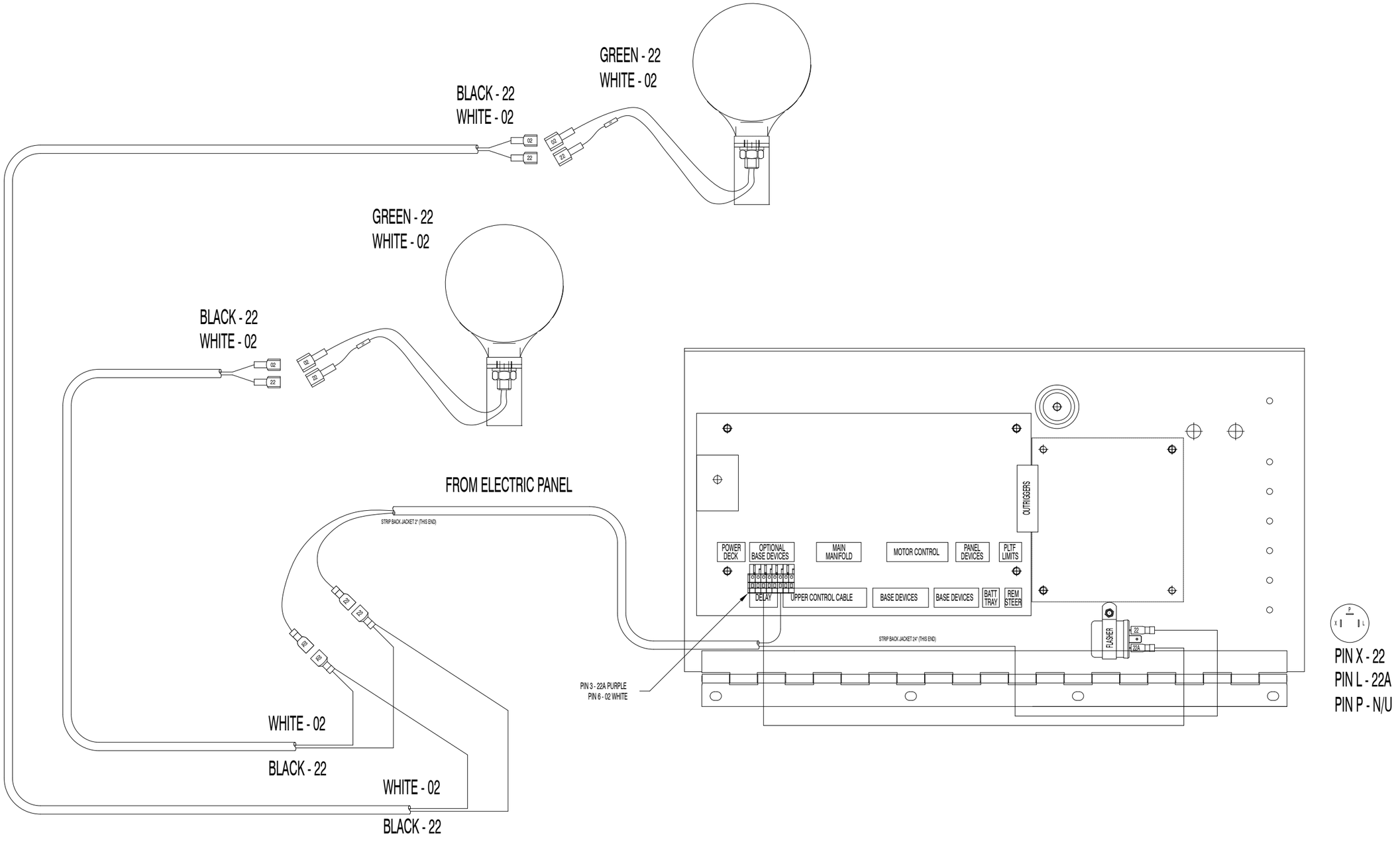
3.22 Electrical Schematic (CE - Equipped with all options)

A B C D E F G H I J K L M N O
R S T U V W X Y Z
48V BATTERY CHARGER
BATTERY CHARGER CUTOUT RELAY
BATTERY PACK
INVERTER OPTION
INVERTER OPTION TIMER
CONVERTER 48VDC INPUT 24VDC OUTPUT
PUMP CONTACTOR
BATTERY CHARGE INDICATOR RELAY
MAIN CONTACTOR
PUMP/TRACTION CONTACTOR
FORWARD CONTACTOR
BRAKE COIL
BRAKE RELAY
REVERSE CONTACTOR
32% ANGLE TRANSDUCER
-32% REVERSE CUT-OUT RELAY
REVERSE RELAY
AUX. REVERSE RELAY
AUX. FORWARD RELAY
FORWARD RELAY
+32% FORWARD CUT-OUT RELAY
BEEPER
FLASHING LIGHT
DUAL FLASHING LIGHT OPTION
HOURMETER
RESISTOR 2.7K OHMS
RIGHT SOLENOID
LEFT SOLENOID
SPEED SIGNAL RELAY
UP SOLENOID
DUMP SOLENOID
DOWN RELAY
AUX. DOWN RELAY
DOWN SOLENOID
HOLDING VALVE
OUTRIGGER MOVEMENT INDICATOR RELAY
HORN
OUTRIGGER DRIVE ENABLE RELAY
OUTRIGGER LIFT ENABLE RELAY
OUTRIGGER POWER RELAY
OUTRIGGER SAFETY RELAY
OUTRIGGER LIFT DISABLE RELAY
OUTRIGGER HOLDING SOLENOID
L/F OUTRIGGER RETRACT SOLENOID
L/F OUTRIGGER EXTEND SOLENOID
R/F OUTRIGGER RETRACT SOLENOID
R/F OUTRIGGER EXTEND SOLENOID
R/R OUTRIGGER RETRACT SOLENOID
R/R OUTRIGGER EXTEND SOLENOID
L/R OUTRIGGER RETRACT SOLENOID
L/R OUTRIGGER EXTEND SOLENOID
110 VAC LINE VOLTAGE
LCR-1
S1 MAIN DISCONNECT
CB2 15A CIRCUIT BREAKER
CB3 20A CIRCUIT BREAKER
F14 200A FUSE
F12 10A FUSE
F13 300A FUSE
F17 50A FUSE
F5 10A FUSE
DCM2 PUMP MOTOR
TG1 TACHOMETER GENERATOR
DCM1 TRACTION MOTOR
CM1 - CONTROL MODULE
J2 - 10 WAY CONNECTOR
ANGLE TRANSDUCER
PRESSURE TRANSDUCER
J1 - 16 WAY CONNECTOR
TC1 - TACHOMETER CARD
SV1 - SEVCON DRIVE
17 WAY CONNECTOR
15A FUSE
10A FUSE
ALL FUNCTION ALARM JUMPER 4
ALL FUNCTION LIGHT JUMPER 9
PUMP MOTOR THERMAL CUTOUT
THERMAL CUTOUT JUMPER 12
END OF STROKE JUMPER 7
NO OUTRIGGER JUMPER 1
NO OUTRIGGER JUMPER 2
NO OUTRIGGER JUMPER 3
POWER DECK JUMPER 10
DRIVE CUTOUT JUMPER 8
LS5 HIGH SPEED LIMIT SWITCH
LOWER OUTRIGGER LIMIT SWITCHES (NORMALLY OPEN HELD CLOSED)
UPPER OUTRIGGER LIMIT SWITCHES (NORMALLY OPEN)
LS1 BRAKE INTERLOCK LIMIT SWITCH
S4 EMERGENCY STOP KEY
NO DECK LIMITS JUMPER 5
JUMPER 11 REMOVED
STEERING PENDANT OPTION
S5 BASE/OFF/PLATFORM KEY SWITCH
S6 UP/DOWN SWITCH
S10 ENABLE SWITCH
DPM1 DELAYED POWER MODULE
S7 EMERGENCY STOP
BCI BATTERY CHARGE INDICATOR
220uF CAPACITOR
0.47uF CAPACITOR
BP-28B BEEPER
WL1 TROUBLE LIGHT
S9 LIFT/OFF/DRIVE SWITCH
S8 BASE/OFF/PLATFORM KEY SWITCH
2.7K OHMS
JS1 CONTROLLER
REVERSE
FORWARD
ENABLE
RIGHT
LEFT
S11 HORN SWITCH
POWERED PLATFORM OPTION
LS6 POWER DECK LIMIT SWITCH N.C. (3FT CUTOUT)
S16 ENABLE SWITCH
S17 EXTEND/RETRACT SWITCH
EXTEND SOLENOID
RETRACT SOLENOID
S19 OUTRIGGER ENABLE
S20 S21 S22 S23
LEFT FRONT
RIGHT FRONT
RIGHT REAR
LEFT REAR
M134391AD

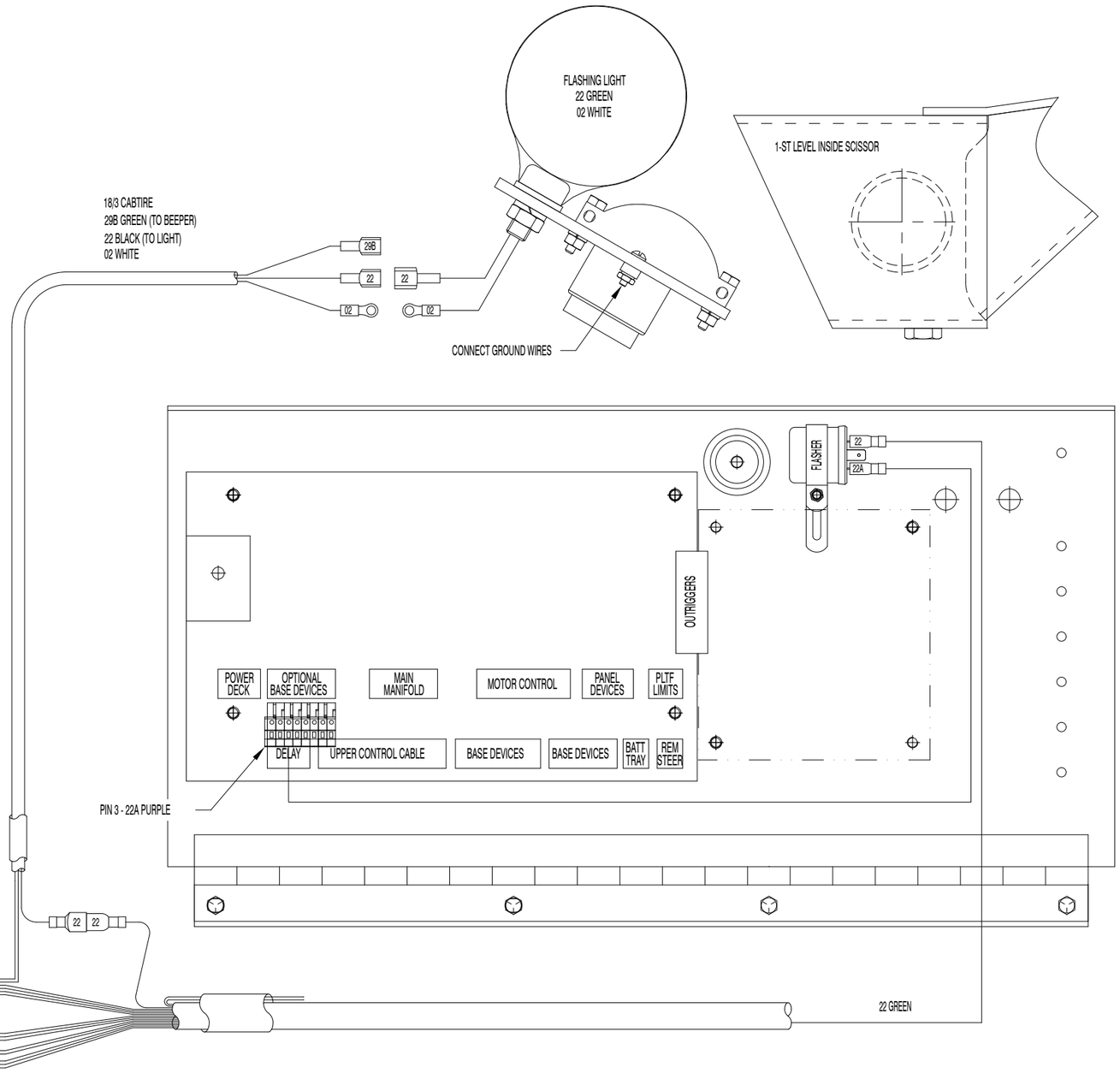
3.23. Flashing Light Option (ANSI/CSA)



3.24. Dual Flashing Light Option (Diagonal) (ANSI/CSA)

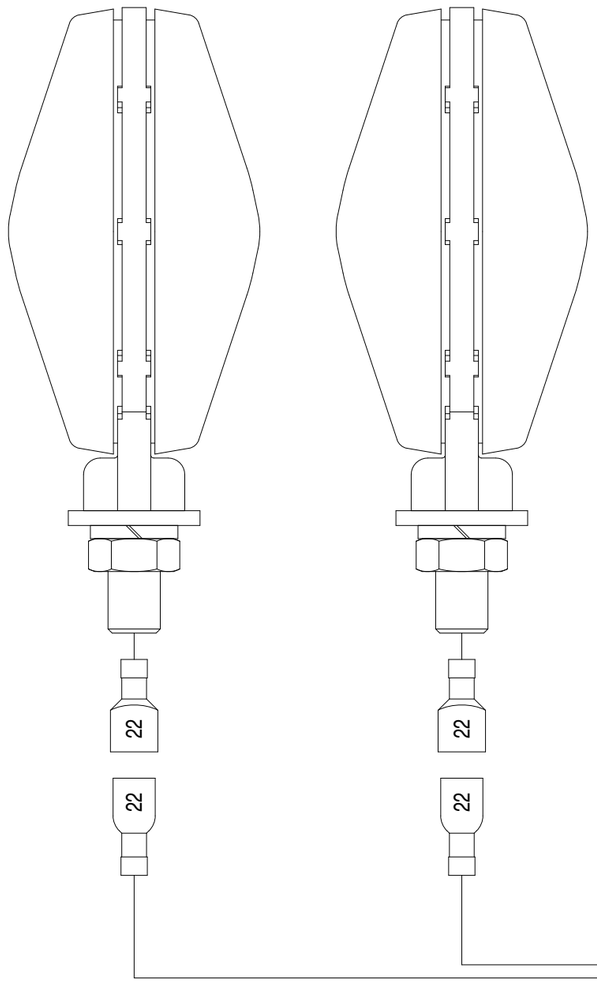


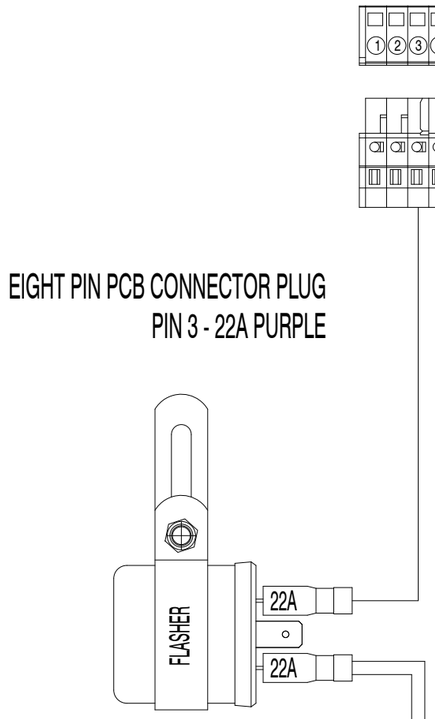
3.25 Flashing Light Option (CE)



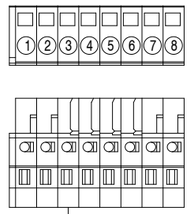
M131948AA

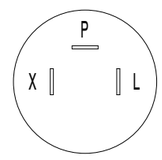
3.26 Dual Flashing Light Option (CE)





EIGHT PIN PCB CONNECTOR PLUG
PIN 3 - 22A PURPLE





PIN X - 22 GREEN
PIN L - 22A PURPLE
PIN P - N/U

M123304AA1

Section 4
TROUBLESHOOTING INFORMATION

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4

Introduction

The following pages contain a table of Troubleshooting Information for locating and correcting most service trouble which can develop. Careful and accurate analysis of the systems listed in the table of Troubleshooting Information will localize the trouble more quickly than any other method. This manual cannot cover all possible troubles and deficiencies that may occur. If a specific trouble is not listed, isolate the major component in which the trouble occurs, isolate whether the problem is electrical or hydraulic, and then isolate and correct the specific problem.

The content of this section is separated into “probable cause” and “remedy.” The information preceded by a number represents the “probable cause.” The following line, noted by a dash represents the “remedy” to the “probable cause” directly above it. See example below for clarification.

1. Probable Cause
   - Remedy

Electrical System

4.1-1 All Controls Inoperative

1. Batteries disconnect or discharged.
   - Connect batteries or recharge.
2. Battery charger plugged into an outside source.
   - Disconnect charger cord.
3. Dirty or loose battery terminal.
   - Clean and tighten terminals.
4. Main battery cables open or defective.
   - Check continuity. Replace if defective.
5. Defective main fuse F13.
   - Replace fuse.
6. Defective battery charger relay LCR-1.
   - Check relay. Replace if defective.
7. Defective or tripped circuit breaker CB2, or CB3.
   - Check for defective wiring. Reset circuit breaker. Replace if defective.
8. Loose or broken wire #01 from circuit breaker CB2 to battery charger relay LCR-1.
   - Check continuity. Replace if defective.
9. Loose or broken wire #03 from battery charger relay LCR-1 to converter X1.
   - Check continuity. Replace if defective.
10. Defective converter X1.
    - Check for 48 Volts input between wires #03 and #B-, check for 24 Volt output between wires #3A and #B-. If there is no output replace converter.
11. Loose or broken wire #3A form converter X1 to circuit breaker CB3.
    - Check continuity. Replace if defective.
12. Loose or broken wire #4 from circuit breaker CB3 to brake interlock limit switch LS1.
    - Check continuity. Replace if defective.
13. Open, out of adjustment or defective brake inter lock limit switch LS1.
    - Release manual brake, disconnect handle. Adjust switch. Replace if defective.
14 Loose or broken wire #4A from brake interlock limit switch LS1 to lower emergency stop switch S4. **(CE)**
    - Check continuity. Replace if defective.
15. Loose or broken wire #4A from brake interlock limit switch LS1 to base lift/lower switch S5. **(ANSI/CSA)**
    - Check continuity. Replace if defective.
16. Open or defective lower emergency stop switch S4. **(CE)**
    - Close switch. Check continuity through switch. Replace if defective.
17. Loose or broken wire #7 or #10E in arm cord. **(CE)**
    - Check continuity. Replace if defective.
18. Open or defective upper emergency stop switch S7. **(CE)**
    - Close switch. Check continuity through switch. Replace if defective.
19. Open or defective contactor C10B-1 or C10B-2.
    - Check for continuity through contactors. Replace if defective.
20. Defective fuse F16 or F15 on tachometer card.
    - Replace fuse.

4.1-2 All Controls Inoperative from Platform

1. Loose or broken wire #7 from the base controls to emergency stop switch S7 in the platform control console.
   - Check continuity. Replace if defective.

Electrical System (Continued)

2. Open or defective platform emergency stop switch S7.
   - Close switch. Replace if defective.
3. Loose or broken wire #7A from the platform emergency stop switch S7 to key switch S8.
   - Check continuity. Replace if defective.
4. Open or defective key switch S8.
   - Close switch. Replace if defective.
5. Loose or broken wire #8 from key switch S8 to lift/off drive switch S9.
   - Check continuity. Replace if defective.
6. Open or defective lift/off drive switch.
   - Close Switch. Replace if defective.
7. Open or defective manual extension deck limit switch LS7. (Optional).
   - Roll in Extension Deck. Check for continuity through switch or loose or broken wires. Replace if defective.
8. Open or defective gate limit switch LS2. (Optional).
   - Close gate. Check for continuity through switch or loose or broken wires. Replace if defective.

4.1-3 Base Controls Inoperative

1. Open or defective base selector platform/base switch S5. **(ANSI/CSA)**
   - Select base. Replace if defective.
2. Open or defective key switch S8. **(CE)**
   - Select base. Replace if defective.
3. Loose or broken wire #10E from key switch S8 to base control console. **(CE)**
   - Check continuity. Replace if defective.
4. Defective lift/lower switch S6 at base controls.
   - Check switch. Replace if defective.
5. Open or defective Diode (Diode-1).
   - Check Diode. Replace if defective.

4.1-4 Up Circuit Inoperative from Platform Controls

1. Open or defective lift/off/drive Switch S9.
   - Select lift. Replace if defective.
2. Defective delayed power module.
   - With lift selected check for 24 Volt output between wire #9 and #02 on delayed power module.
3. Defective Fuse F3.
   - Replace fuse.
4. Open or defective diode D9C, D9, D9A or D9A-1.
   - Check diode. Replace if defective.
5. Loose or broken wire #9A from main circuit board to Sevcon input plug pin #16 and #13.
   - Check continuity. Replace if defective.
6. Loose or broken wire #14 from lift/off/drive switch S9 to control box circuit board.
   - Check continuity. Replace if defective.
7. Open or defective diode D14.
   - Check diode. Replace if defective.
8. Open or defective end of stroke limit switch LS4.
   - Check switch. Replace if defective.
9. Loose or broken wire #14 C or #14D from main circuit board to end of stroke limit switch LS4.
   - Check continuity. Replace if defective.

Electrical System (Continued)

10. Open or defective thermal cutout switch TCS1 in pump motor DCM2.
    - Let pump motor cool down. Check continuity through switch. Replace if defective.
11. Loose or broken wire#14D or #14F from main circuit board to thermal cutout switch TCS1.
    - Check continuity. Replace if defective.
12. Loose or broken wire #14F or #02 from main circuit board to lift coil 3H-14F.
    - Check continuity. Replace if defective.
13. Defective lift coil 3H-14F.
    - Check Coil. Replace if defective.
14. Open or defective diode D14F.
    - Check Diode. Replace if defective.
15. Defective dump coil 2H-21A.
    - Check coil. Replace if defective.
16. Loose or broken wire #21A or #02 from main circuit board to dump coil 2H-21A.
    - Check continuity. Replace if defective.
17. Sevcon problem.
    - See Sevcon troubleshooting Section 4.
18. Outrigger not properly set. (Optional)
    - See outrigger circuit. Troubleshooting Section 4.

4.1-5 Up Circuit Inoperative from Base Controls

1. Defective lift/lower switch S6.
    - Check switch. Replace if defective.
2. Loose or broken wire #14E from lift/lower switch S6 to main circuit board.
    - Check continuity. Replace if defective.
3. Open or defective diode D14E or D14E-1.
    - Check diode. Replace if defective.
4. Defective speed signal relay 59CCR.
    - Check relay. Replace if defective.
5. Outrigger no properly set. (Optional)
    - See outrigger circuit troubleshooting Section 4.

4.1-6 Down Circuit Inoperative

1. Loose or broken wire #13 or #02 on coil 2H-13, 2H-13-1 or 2H-13-2.
    - Check continuity. Replace if defective.
2. Defective coil 2H-13, 2H-13-1 or 2H-13-2.
    - Check coil. Replace if defective.
3. Loose or broken wire #13 on lift/off/drive switch S9. (Platform control console)
    - Check continuity. Replace if defective.
4. Defective lift/lower switch S6. (Base control console)
    - Check switch. Replace if defective.
5. Loose or broken wire #13 on lift/lower switch S6. (Base control console)
    - Check continuity. Replace if defective.

4.1-7 Platform does Not Steer Left or Right

1. Defective steer toggle switch.
    - Check switch. Replace if defective.
2. Open or defective diode D18A.
    - Check Diode. Replace if defective.
3. Loose or broken wire #18A from main circuit board to pump contactor C18A.
    - Check continuity. Replace if defective.

Electrical System (Continued)

4. Defective pump ontactor C18A.
   - Check Contactor. Replace if defective.
5. Defective fuse F14.
   - Replace fuse.
6. Loose or broken B-cable from B-terminal on Sevcon to pump contactor C18A.
   - Tighten cable. Check continuity. Replace if defective.

4.1-8 Platform does Not Steer Right

1. Loose or broken wire #23 from steer toggle switch to circuit board in control console.
   - Check continuity. Replace if defective.
2. Loose or broken wire #23 in scissors arm cord.
   - Check continuity. Replace if defective.
3. Open or defective diode D23.
   - Check Diode. Replace if defective.
4. Defective coil 4H-23.
   - Check Coil. Replace if defective.
5. Loose or broken wire #23 or #02 from main circuit board to coil 4H-23.
   - Check continuity. Replace if defective.
6. Defective steer toggle switch.
   - Check switch. Replace if defective.

4.1-9 Platform does Not Steer Left

1. Loose or broken wire #24 from steer toggle switch to circuit board in control console.
   - Check continuity. Replace if defective.
2. Loose or broken wire #24 in scissors arm cord.
   - Check continuity. Replace if defective.
3. Open or defective diode D24.
   - Check diode. Replace if defective.
4. Defective coil 4H-24.
   - Check coil. Replace if defective.
5. Loose or broken wire #24 or #02 from main circuit board to coil 4H-24.
   - Check continuity. Replace if defective.
6. Defective steer toggle switch.
   - Check switch. Replace if defective.

4.1-10 Forward and Reverse Drive Inoperative

1. Open or defective lift/off/drive switch S9.
   - Select drive. Check switch. Replace if defective.
2. Loose or broken wire #12C on lift/off/drive switch S9.
   - Check continuity. Replace if defective.
3. Defective delayed power module.
   - Check for 12 Volts between wire #12 and #02. Replace if defective.
4. Defective diode D12C.
   - Check diode. Replace if defective.
5. Defective fuse F1.
   - Replace fuse.
6. Open, out of adjustment or defective drive cutout limit switch LS3. **(CE) (Optional on ANSI/CSA)**
   - Adjust switch. Check for continuity through Switch. Replace if defective.
7. Open or defective diode D12 or D12D.
   - Check diode. Replace if defective.

Electrical System (Continued)

8. Defective relay 59CCR.
   - Check relay. Replace if defective.
9. Loose or broken wire #59B from main circuit board to Pin #14 on Sevcon.
   - Check continuity. Replace if defective.
10. Sevcon problem.
   - See Sevcon troubleshooting of Section 4.
11. Outriggers not retracted (Optional).
   - See outrigger circuit troubleshooting of Section 4.

4.1-11 Forward Drive Inoperative

1. Loose or broken wire #16 from lift/off/drive switch S9 to control console circuit board.
   - Check continuity. Replace if defective.
2. Loose or broken wire #16 in scissors arm cord.
   - Check continuity. Replace if defective.
3. Open or defective diode D16.
   - Check Diode. Replace if defective.
4. Loose or broken wire #16B from main circuit board to pin #8 on Sevcon.
   - Check continuity. Replace if defective.
5. Defective contacts in contactor C16A.
   - Replace contactor.
6. Loose or broken wire #16A from Pin# 15 on Sevcon to contactor C16A.
   - Check continuity. Replace if defective.

4.1-12 Reverse Drive Inoperative

1. Loose or broken wire #15 from lift/iff/drive S9 to control console circuit board.
   - Check continuity. Replace if defective.
2. Loose or broken wire #15 in scissors arm cord.
   - Check continuity. Replace if defective.
3. Loose or broken wire #15 from main circuit board to Pin #11 on Sevcon.
   - Check continuity. Replace if defective.
4. Defective contacts in contactor C15A.
   - Replace contactor.
5. Loose or broken wire #15A from Pin #17 on Sevcon to contactor C15A.
   - Check continuity. Replace if defective.

4.1-13 Forward and Reverse Slow Speed Only

1. Out of adjustment or defective high drive cutout limit switch LS5.
   - Adjust switch. Check for continuity through switch. Replace if defective.
2. Loose or broken wire #10A from main circuit board to Pin #4 on Sevcon.
   - Check continuity. Replace if defective.
3. Loose or broken wire #28 from main circuit board to Pin #7 on Sevcon.
   - Check continuity. Replace if defective.
4. Open or defective tilt switch TS1.
   - Check tilt switch. Replace if defective.

4.1-14 Brake will Not Release

1. Defective relay 10BCR.
   - Check relay. Replace if defective.
2. Loose or broken wire #10B from E terminal on the tachometer card to brake relay 10BCR.
   - Check continuity. Replace if defective.

Electrical System (Continued)

3. Loose or broken wire #2A from Pin #10 on tachometer card to brake relay 10BCR.
   - Check continuity. Replace if defective.
4. Loose or broken wire #25 from brake relay 10BCR to main circuit board.
   - Check continuity. Replace if defective.
5. Loose or broken wire #25 or #02 from main circuit board to electric brake EB25.
   - Check continuity. Replace if defective.

4.1-15 Brake Applies too Quickly when Drive Function is Released

1. Open or defective diode/resistor combination DR-2 from wire #2A to #10B on brake relay 10BCR.
   - Check for resistance through combination. Replace if defective.
2. Open or defective diode/resistor combination DR-3 from wire #25 to #02 on brake relay 10BCR.
   - Check for resistance through combination. Replace if defective.

4.1-16 Powered Extension Platform Inoperative (Optional)

1. Loose or broken wire #9, #02 or #59 in power platform arm cord.
   - Check continuity. Replace if defective.
2. Defective fuse F2.
   - Replace fuse.
3. Loose or broken wire #9 from power deck circuit board to power deck enable switch S16.
   - Check continuity. Replace if defective.
4. Defective power platform enable switch S16.
   - Check switch. Replace if defective.
5. Loose or broken wire #9 from power platform enable switch S16 to power platform extend/retract switch S17.
   - Check continuity. Replace if defective.
6. Defective power platform extend/retract switch S17.
   - Check switch. Replace if defective.

4.1-17 Powered Extension Platform Inoperative (Optional) (Extend Inoperative)

1. Loose or broken wire #26 from extend/retract switch S17 to power platform circuit board.
   - Check continuity. Replace if defective.
2. Defective diode D26.
   - Check diode. Replace if defective.
3. Defective extend coil 4H-26.
   - Check coil. Replace if defective.
4. Loose or broken wire #26 or #02 on coil 4H-26.
   - Check continuity. Replace if defective.

4.1-18 Powered Extension Platform Inoperative (Optional) (Retract Inoperative)

1. Loose or broken wire #27 from extend/retract switch S17 to power platform circuit board.
   - Check continuity. Replace if defective.
2. Defective diode D27.
   - Check diode. Replace if defective.
3. Defective retract coil 4H-27.
   - Check coil. Replace if defective.
4. Loose or broken wire #27 or #02 on coil 4H-27.
   - Check continuity. Replace if defective.

Electrical System (Continued)

4.1-19 Outrigger Circuit Inoperative (Optional)

1. Defective fuse F4.
   - Replace Fuse.
2. Defective outrigger enable relay 10ACR or 10ACR1.
   - Check relay. Replace if defective.
3. Loose or broken wires in outrigger scissors arm cord.
   - Check continuity. Replace if defective.
4. Defective outrigger switch S20, S21, S22 or S23.
   - Check switch. Replace if defective.
5. Defective coil 2H-17A, 4H-71, 4H-72, 4H-73, 4H-74, 4H-75, 4H-76, 4H-77 or 4H-78.
   - Check coil. Replace if defective.
6. Loose or broken wire #02, #17A, #71, #72, #73, #74, #75, #76, #77 or #78.
   - Check continuity. Replace if defective.

4.1-20 Outrigger Circuit Inoperative (Optional) (No Lift with Outriggers Deployed)

1. Open or defective limit switch LS61, LS62, LS63 or LS64.
   - Check adjustment of switch. Replace if defective.
2. Defective lift disable relay 17ACR.
   - Check relay. Replace if defective.
3. Defective lift enable relay 65CR.
   - Check relay. Replace if defective.

4.1-21 Outrigger Circuit Inoperative (Optional) (No Lift with Outriggers Retracted)

1. Open or defective limit switch LS65, LS66, LS67 or LS68.
   - Check adjustment of switch. Replace if defective.
2. Defective lift disable relay 17ACR.
   - Check relay. Replace if defective.
3. Defective lift enable relay 65CR.
   - Check relay. Replace if defective.

4.1-22 Outrigger Circuit Inoperative (Optional) (No Drive with Outriggers Retracted)

1. Open or defective limit switch LS65, LS66, LS67 or LS68.
   - Check adjustment of switch. Replace if defective.
2. Defective drive enable relay 61CR-1.
   - Check relay. Replace if defective.

Electrical System (Continued)

4.2-1 Sevcon Flash Codes

No Function

LED is Off

1. Batteries Disconnected.
   - Reconnect batteries.
2. Defective Sevcon.
   - Replace Sevcon.

Procedure Fault

2 Flash Fault

1. Lift or drive selected before power up.
   - First power up and then select function.

3 Flash Fault

1. Sevcon shorted.
   - Replace sevcon.
2. Drive motor shorted.
   - Replace drive motor.

4 Flash Fault

1. Contactor welded.
   - Replace contactor.

5 Flash Fault

1. Contactor not shifted.
   - Clean contactor. Replace if defective.
2. Defective Sevcon.
   - Replace Sevcon.

No Drive and Lift

6 Flash Fault

1. Loose or broken wire #59 from platform control console to main circuit board.
   - Check continuity. Replace if defective.
2. Open or defective base speed relay 59CCR.
   - Check relay. Replace if defective.
3. Main circuit board to pin #14 on Sevcon.
   - Check continuity. Replace if defective.

Low Battery Voltage

7 Flash Fault

1. Batteries have dropped below 13 volts.
   - Recharge batteries.

Electrical System (Continued)

Thermal Cutback

8 Flash Fault

1. Sevcon Overheating.
   - Let unit cool down.

10 Flash Fault

1. Loose or broken wire from pin #2 on Sevcon to pin #4 on tachometer board.
   - Check continuity. Replace if defective.
2. Loose or broken wire from pin #12 on Sevcon to pin #4 on tachometer board.
   - Check continuity. Replace if defective.
3. Loose or broken wire #T1 or #T2 from tachometer generator to main circuit board.
   - Check continuity. Replace if defective.

Tachometer Fault

11 Flash Fault

1. Tachometer generator defective.
   - Check output 20.8 volts per 1000 RPM. Replace if defective.
2. Tachometer generator wires reversed.
   - Switch wires at generator.
3. Defective tachometer board.
   - Check tachometer board for inputs and outputs. Replace if defective.

Tilt Condition with Platform Elevated

12 Flash Fault

1. Tilt condition with platform elevated has disabled Sevcon for lift and drive.
   - Lower platform and reposition to a firm level surface.

Low or Open Voltage to Sevcon

14 Flash Fault

1. Loose or broken wire to pin #5 on Sevcon.
   - Check for 24 volts between pin #5 and wire #02.
2. Loose or broken wire to pin #6 on Sevcon.
   - Check for 48 volts between pin #6 and wire #02.

Hydraulic System

4.3-1 All Functions Inoperative

1. Defective Hydraulic Pump P1.
   - Check Pump output. Repair or Replace if defective.
2. Defective system dump valve 2H-21A.
   - Check Valve. Replace if defective.

4.3-2 All Systems Sluggish

1. Systems Contaminated.
   - Thoroughly flush hydraulic system and add new hydraulic oil. Refer to Section 5 for recommendations.
2. Defective system relief valve R1 or when valve is set to low.
   - Check serial number name plate for correct pressure setting. Replace valve if defective.

4.3-3 No Steering Left or Right

1. Stuck or defective steer valve 4H-23 or 4H-24.
   - Check valve. Replace if defective.
2. Plugged or contaminated steer orifice 02.
   - Clear contamination. Reinstall steer orifice.
3. Internal leakage of steer cylinder C1.
   - Replace packing or replace cylinder if defective.

4.3-4 Platform does Not Lift

1. Not shifting or contaminated lift valve 3H-14F.
   - Clean valve and reinstall. Replace if defective.
2. Stuck open emergency lowering valve V1.
   - Clean valve and reinstall. Replace if defective.
3. Defective lift relief valve R2.
   - Replace valve if defective.

4.3-5 Platform Lifts Slowly

1. Contaminated system dump valve 2H-21A.
   - Clean valve and reinstall. Replace if defective.
2. Contaminated emergency lowering valve V1.
   - Clean valve and reinstall. Replace if defective.
3. Defective lift relief valve R2 or when valve set to low.
   - Check serial number name plate for correct pressure setting. Replace if defective.
4. Open, contaminated or defective lift cylinder holding valve 2H-13-1 or 2H-13-2 manual override
   - Depress manual override knob and rotate clockwise to close valve. Clean valve and reinstall. Replace if defective.
5. Worn hydraulic pump P1.
   - Check pump performance. Repair or replace if defective.

4.3-6 Platform Drifts Down

1. Open, contaminated or defective main lowering valve 2H-13 and lift cylinder holding valves 2H-13-1 and 2H-13-2 manual override.
   - Depress manual override knob and rotate clockwise. Clean valve and reinstall. Replace if defective.
2. Stuck open, contaminated or defective manual lowering valve V1 and lift cylinder holding valves 2H-13-1 and 2H-13-2.
   - Clean valve and reinstall. Replace if defective.

Hydraulic System (Continued)

3. Internal leakage of lift cylinders C2 and C3.
   - Repack cylinders. Replace if defective.

4.3-7 Down Circuit Inoperative

1. Not shifting or defective lowering valve 2H-13.
   - Clean valve and reinstall. Replace if defective.
2. Not shifting or defective lift cylinder holding valve 2H-13-1 or 2H-13-2.
   - Clean valve and reinstall. Replace if defective.
3. Plugged lowering orifice 04, 05 or 06.
   - Clear contamination. Reinstall lowering orifice.

4.3-8 Powered Extension Platform will Not Extend or Retract

1. Not shifting or stuck powered extension valve 4H-26 or 4H-27.
   - Clean valve and reinstall. Replace if defective.
2. Internal leakage of powered extension cylinders C4 and C5.
   - Replace packing. Replace cylinder if defective.

4.3-9 Outrigger Circuit Inoperative

1. Not shifting or defective holding valve 2H-21A or outrigger valve 4H-71, 4H-72, 4H-73, 4H-74. 4H-75, 4H-76, 4H77 or 4H-78.
   - Clean valve and reinstall. Replace if defective.
2. Not shifting or defective check valve CV1, CV2, CV3, CV4, CV5, CV6, CV7, or CV8.
   - Clean valve and reinstall. Replace if defective.
3. Plugged outrigger orifice 07, 08, 09 or 010.
   - Clear contamination. Reinstall outrigger orifice.

Section 5
PROCEDURES

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Load Sensing System - CE

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5

General

The following information is provided to assist you in the use and application of servicing and maintenance procedures contained in this chapter.

Safety and Workmanship

Your safety, and that of others, is the first consideration when engaging in the maintenance of equipment. Always be conscious of weight. Never attempt to move heavy parts without the aid of a mechanical device. Do not allow heavy objects to rest in an unstable position. When raising a portion of the equipment, ensure that adequate support is provided.

Base

5.1-1 System Relief Pressure Adjustment

1. Locate the system pressure quick disconnect port on the main manifold.
2. Install a calibrated 3000 psi gauge to the system pressure quick disconnect port.
3. Remove the platform control console the guardrail and disconnect from the main control cable.
4. Locate the main control cable plug at the rear of the aerial platform.
5. Disconnect the main cable and connect the platform control console into the plug.
6. At the main manifold, loosen the locknut on the system relief valve R1.
7. Select drive with the lift/drive select switch on the platform control console.
8. Engaged steer right and hold.
9. Observe reading on gauge. Adjust the R1 system relief value listed on the serial number plate. Turning the stem on the relief valve clockwise to increase pressure. Turning the stem counterclockwise to decrease pressure.
10. Release steer switch and tighten the locknut.
11. Remove the gauge from system pressure test port.

5.1-2 Lift Pressure Adjustment

NOTE

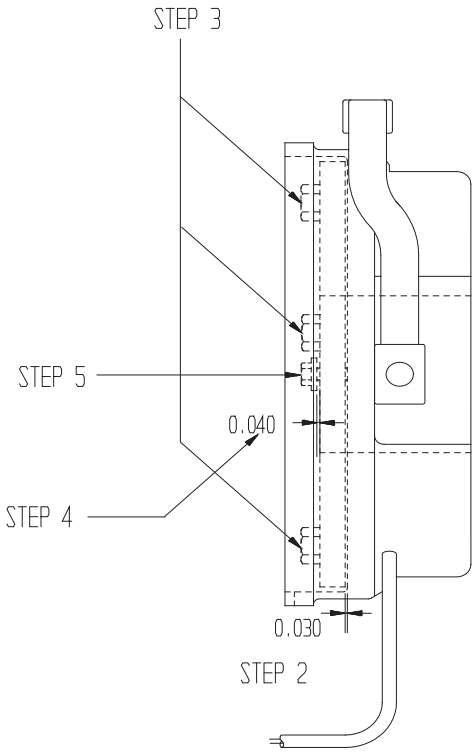
Adequate area to raise the platform to full height is required for the following steps.

1. Locate the lift pressure test port on the main manifold.
2. Install a calibrated 3000 psi gauge to the lift pressure quick disconnect port.
3. At the main manifold, loosen the locknut on the lift relief valve R2.
4. Close the manual lowering valve. Use the lift switch at the base control console to raise the platform to full height and hold the lift up switch on.
5. Observe the reading on the gauge. Adjust the R2 relief valve to the value listed on the serial number plate. Turning the stem of the relief valve clockwise to increase pressure. Turning the stem counterclockwise to decrease pressure.
6. Remove the gauge from lift pressure test port.

NOTE

Pressure setting may vary as aerial platform components wear. The lift pressure should be set for rated load only.

5.1-3 Brake Setup Procedure



To check the electric parking brake operation, put the machine on a 25% grade and make sure the brakes holds. If the unit does not hold, put the machine on a level surface, block the wheels and remove the electric brake from the drive motor. If the measurements are set as below, replace the friction disc. If the measurements are not as below, set the brake up as stated and repeat the grade test after reassembly.

The electric brake on the SJIII6826E and SJIII6832E is merely a parking brake. It is preadjusted at the factory and should not need adjusting. Should something occur and you need to setup the electric brake, follow the steps below to insure proper operation and life of the brake.

STEP 1 Place machine on a level surface and block the wheels to prevent the machine from rolling away. Remove the brake assembly from the drive motor.

STEP 2 With a feeler gauge check the gap between the plate and the stator. The gap should be .030” all around between the plate and stator.

STEP 3 To adjust the gap, turn the three large adjusting nuts. To decrease the gap, turn the adjusting nuts clockwise. To increase the gap, turn the adjusting nuts counterclockwise.
MAKE SURE GAP IS PERFECTLY EVEN AT .030” ALL AROUND THE PLATE AND STATOR.

NOTE

If the gap is greater than specified it may cause motor or brake damage. If the gap is less than specified the brake may not apply.

STEP 4 With a feeler gauge, check the gap between the plate and the washer for the bolt that holds the handle for the manual brake release. The gap should be .040”.

STEP 5 If adjustment is necessary, remove the bolts completely and apply a threadlock compound to the bolts. Reinstall and set the gap as specified in step 4. Note: If the gap is greater than specified, you may not be able to release the brakes manually. If the gap is less than specified, the brake may not apply.

5.2-1 Sevcon Calibration Tool

All machine functions remain operational while calibrator is plugged in.

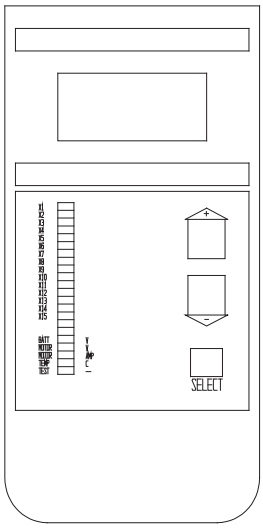
ADJUSTMENT PROCEDURE:

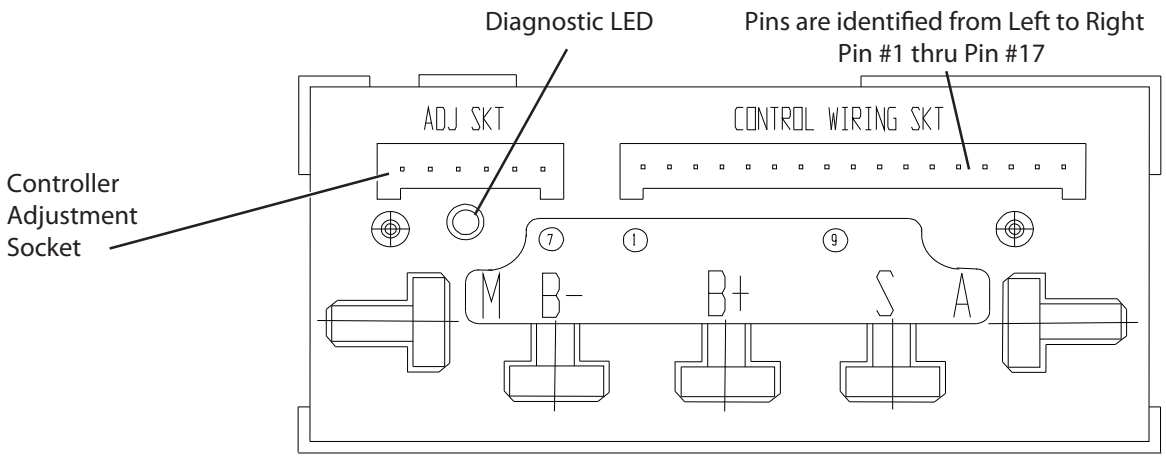
The following procedure is relevant for the drive controller, except where otherwise noted. The controller is preset to factory specifications but may be readjusted.

A hand-held calibrator (Figure 5-2, Skyjack part #701051) can be plugged into the controller adjustment socket and used to digitally view or reset the parameters. The current value of these parameters will be shown on an LCD display. Additionally, the calibrator can perform certain measurements that can be useful for diagnostic purposes.

The calibrator has a bar display, operated by the SELECT button, showing the parameters/ measurement selected and an LCD display showing values that, provided they are parameters, may be adjusted using the +/- buttons. This unit can also be used to perform certain tests on the control wiring and controller (joystick).

1. Locate Sevcon inside Electrical/Hydraulic Cabinet on the right side of the machine.
2. Locate controller adjustment socket, as shown in Figure 5-3, and connect hand-held calibrator. Power up the Platform by selecting platform controls using key switch at the Platform Control Box.
3. No LED segments on the bar display will be lit and the minutes/seconds count is displayed. The hours count is displayed by pressing the (-) button and the 1000's of hours count is displayed by pressing the (+) button as described later in this section. Pressing the select button reverts the calibrator to its normal operation and the IMax LED will be lit.
4. When the desired parameters has been selected, on the left side of the calibrator, it may be adjusted by pressing the + or - button on the right side of the calibrator. See Table 5-3. for adjustable parameters and ranges.
5. When the calibrator is unplugged the Sevcontrol will 'memorize' the new parameters settings.





SEQ. NO.	PARAMETER	MIN.	MAX.	UNITS	DEFAULT
1	IMAX Maximum Controller Current	50	400	Amps	400
2	ACCEL Acceleration Delay	1.0	3.0	Seconds	3.0
3	DECAL Deceleration Delay	0.1	3.0	Seconds	0.1
4	CREEP Traction Creep	0	10	% of Max. Speed	2
5	MAX Maximum Allowed Speed	5	100	% of Max. Possible Speed	100
6	ELEVA Elevated Cutback Speed	7	30	% of Max. Speed	22
7	TILT Tilted Cutback Speed	5	70	% of Max. Speed	70
8	CONSTANT SPEED CONTROL Proportional Gain	0	50	Counts	30
9	CONSTANT SPEED CONTROL Integral Gain	1	100	Counts	20
10	BATTERY Low Battery Cut-out	25	40	Volts	25
11	PUMP Acceleration Delay	1.0	3.0	Seconds	1.0
12	PUMP Creep	0	30	% of Max. Speed	14
13	BOOM UP TRACTION Current Limit	50	400	Amps	90
14	PUMP Contactor Open Delay Personality	0.0	3.0	Seconds	0.3
15	ENABLE/DISABLE LIFT Power Down	0.0	0.1	0=Disabled 1=Enabled	0-Disabled

HOURS COUNTER:
The hours counter records pulsing hours, and is displayed when the calibrator is first plugged in. Once the SELECT button is pressed, the calibrator reverts to normal operation.

Initially a minute/seconds count is displayed. By pressing the (-) button, hours are displayed and by pressing the (+) button 1000's of hours are displayed.

Releasing the buttons reverts back to the minute/seconds display. The decimal point blinks every second during drive. The counter will record up to 65,500 hours before rolling back to 0.

DIAGNOSTIC PROCEDURE:

WARNING

All machine functions remain operational while calibrator is plugged in.

The last five segments on the bar display are as follows.

BATT	Displays the current battery voltage. Pressing the (+) button displays the highest voltage, for the machine, that the Sevcontrol has recorded.
MOTOR V.	Displays the motor voltage as the machine is being driven.
MOTOR AMP	Displays the motor current as the machine is being driven.
TEMP	Displays the temperature of the MOSFET heat sink in °C. Pressing the (+) button displays the highest temperature recorded and pressing the (-) button displays the lowest temperature recorded.
TEST	This invokes the diagnostic test routines to check machine switches, joystick, control wiring etc.

With the calibrator connected and the platform powered up, as described in the adjustment procedure. Use the SELECT button to select the test segment. If the SELECT button is pressed at any time during the test, the test will be terminated and the minute/seconds count will be displayed.

The first test displayed, on the drive Sevcontrol, is the joystick input. This displays the input as 0-100% as joystick is moved from min. to max.

Pressing the (+) and (-) buttons step through the tests as shown in Table 5-4. After the final test, the sequence will loop back to the joystick input test, then test 1.

5.2-2 Sevcontrol Test Sequence Chart

Drive Controller Test Sequence		
Seq. No.	**Test**	**Display**
-	Controller (Joystick) Input	0 to 100%
1	Forward Switch	CL / OP
2	Reverse Switch	CL / OP
3	Tachometer Input	0 to 100%
4	Elevated Position	CL=Collapsed OP=Lifted
5	Tilt Switch	CL=Level OP=Tilt
6	Pump/Traction Swtich	CL=Pump Mode OP=Traction Mode
7	Actual Direction, Tachometer Output	CL=Reverse OP=Forward
8	Turret Position	CL=Rotated OP=Normal
9	Traction Mode	1=Traction Mode Active
10	First Error Latch	Value=Flash Code
		NOTE: CL=Closed Switch OP=Opened Switch

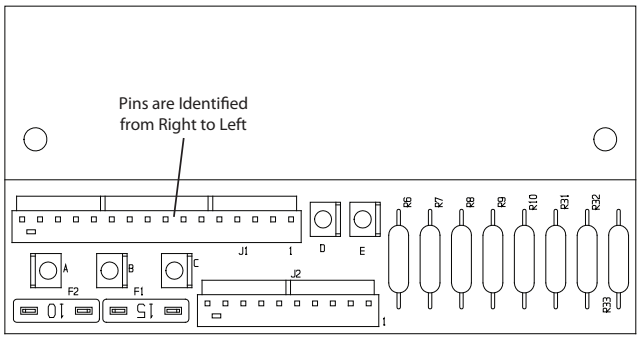
5.2-3 Traction Controller Pin Reference

Pin	Operation	Test
1	Brings B-to pump/traction contactor (C10B-1)	Test between pin 1 and wire #10A.
2	Direction signal from pin 4 of tachometer card. Determines direction. 0 volts = Forward. 15 volts = Reverse.	Test between pin 4 and wire #02.
3	Not Used	-
4	High Drive Cut-out. 24 volts high drive enabled. 0 volts high drive disabled.	Test between pin 4 and wire #02 with platform fully lowered.
5	24 volt input from Terminal C on Tachometer Card.	Test between pin 6 and wire #02.
6	48 volt input from line contactor.	Test between Pin 6 and wire #02 with Key Switch on.
7	Tilt switch input. 24 volts = Full speed 0 volts = 50% full speed.	Test between pin 7 and wire #02.
8	Forward/Up input from joystick. 24 volts = Drive forward or lift up selected.	Test between pin 8 and wire #02.
9	Not Used.	-
10	Not Used.	-
11	Reverse direction input from joystick 24 volts = reverse selected.	Test between pin 11 and wire #02.
12	Speed signal from pin 2 on tachometer card. 7.5 volts with joystick in neutral. 7.5 volts to 15 volts = Reverse. 7.5 volts to 0 volts = Forward.	Test between pin 12 and wire #02.
13	Direction Signal. 24 Volts = Lift Mode.	Test between pin 13 and wire #02.
14	Accelerator input. 3.8 to 4.2 volts with joystick in neutral and key switch on. 3.5 volts = Slow speed. 0 volts = Fast speed.	Test between pin 14 and wire #02.
15	Forward contactor output.	-
16	Drive/Lift Select. 0 volts = Drive 24 volts = Lift	Test between pin 16 and wire #02.
17	Reverse contactor output. Brings B - to reverse drive contactor.	Test between pin 17 and wire #10A.

5.2-4 Traction Controller Flashing Fault Pin References

	2 Flash	3 Flash	4 Flash	5 Flash	6 Flash	7 Flash	8 Flash	10 Flash	11 Flash	12 Flash	14 Flash
Pin 1											
Pin 2								X	X		
Pin 3											
Pin 4											
Pin 5						X					X
Pin 6						X					X
Pin 7										X	
Pin 8	X			X							
Pin 9											
Pin 10											
Pin 11	X			X							
Pin12								X	X		
Pin 13											
Pin 14					X						
Pin 15			X	X							
Pin 16	X										
Pin17			X	X							

5.2-5 Tachometer Board Pin Reference



Pin	Operation	Test
1	Battery negative	-
2	Speed signal to Pin 12 on controller. 7.5 volts with key switch on and platform selected 7.5 volts to 15 volts = Reverse 7.5 volts to 0 volts = Forward	Test between pin 2 and wire #02.
3	Tachometer generator input.	-
4	Direction signal to Pin 2 on controller.	-
5	Tachometer generator input.	-
6	Not used.	-
7	Not used.	-
8	Forward Direction selected.	-
9	Reverse Direction selected.	-
10	Brings B-to Brake Relay (10BCR).	-
11	Steer Enable.	-
12	Not used.	-
13	Spike suppression B-	-
14	Not used.	-
15	Not used.	-
16	Not used.	-
Terminal	**Operation**	**Test**
A	48 volt input from line Contactor.	-
B	24 volt input from wire #10B.	Test between terminal B and wire 02.
C	24 volt output to drive, traction/pump contactors, Term D and Pin #5 on Sevcon.	Test between terminal C and wire #02. Fused from Term B.
D	24 Volt Input from Term C and 24 Volt output to Brake Relay (10BCR).	Test between Term D and wire #02.
E	24 Volt Output to line Contactor (C10B-2) and Brake Relay (10BCR).	Test between Term E and wire #02.

5.2-6 Tachometer Generator Testing Procedure

1. Locate tachometer generator on back of drive motor. Remove rubber boot from the rear of the tachometer generator.
2. Mark the location of the wires attached to the generator and remove wires.

NOTE

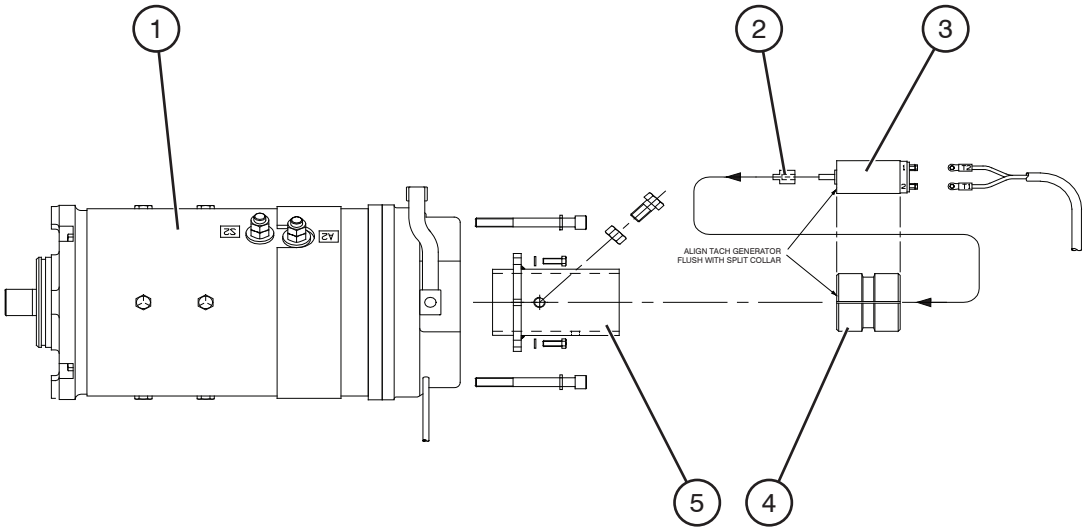
Wires must be reattached to the same terminals as they were removed from or the Sevcon controller will not function when reassembled.

3. Remove the four 5/16-18 x 1-1/2" bolts securing the tachometer generator mounting plate to the rear of the motor.

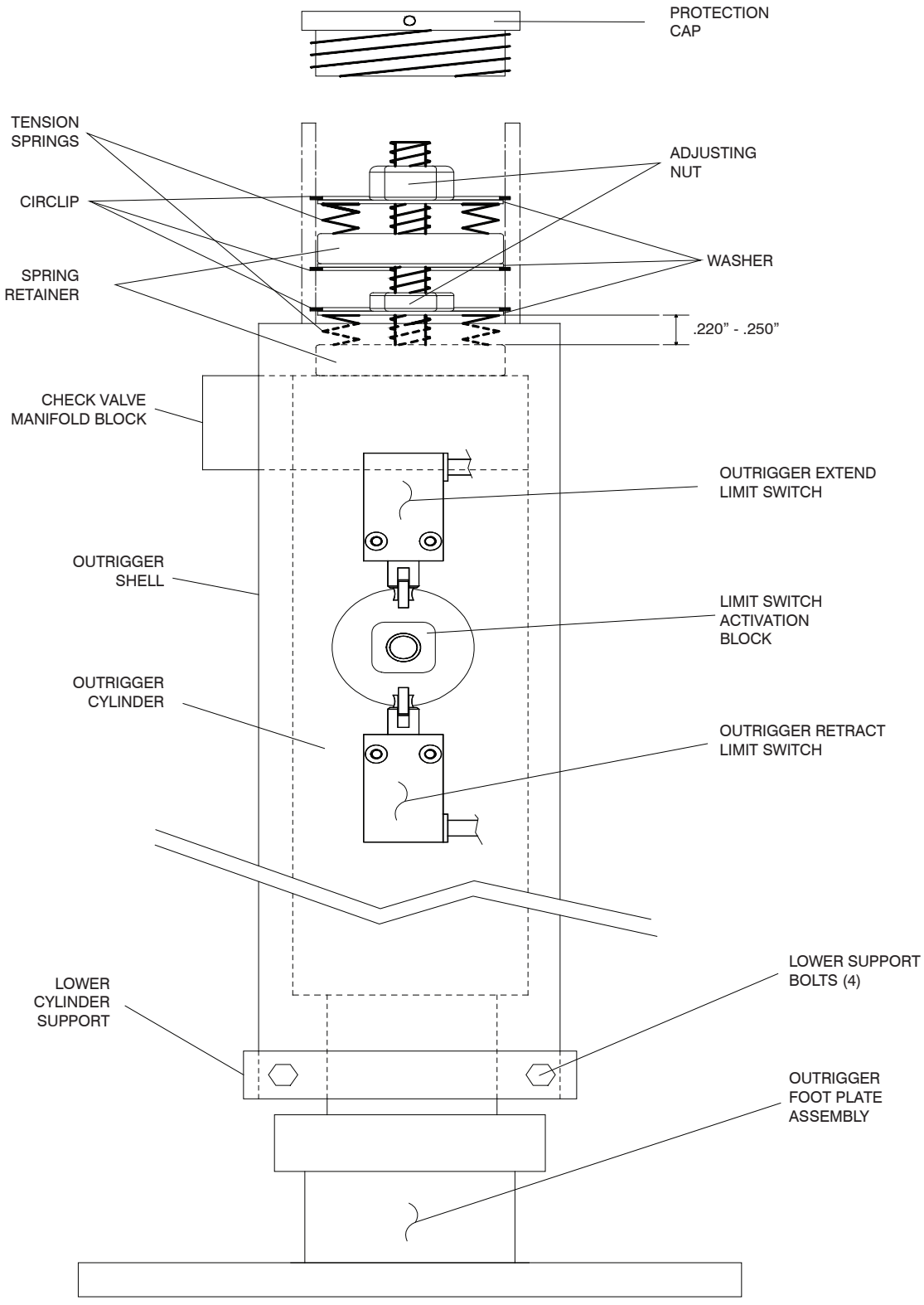
NOTE

Do not attempt to remove the tachometer generator from mounting plate until it has been determined to be defective.

4. Remove the coupler from the tachometer generator and attach generator to a drill with a 1000 RPM rating.
5. Attach a voltmeter to the terminals on the rear of the tachometer generator and set the meter for D.C. voltage.
6. Energize drill and read voltage on meter. At 1000 RPM you should read at least 20.8 volts. If reading is lower than 20.8 volts, the tachometer generator is defective.



1. DRIVE MOTOR
2. RUBBER COUPLING
3. TACHOMETER GENERATOR
4. TACHOMETER SPLIT COLLAR
5. TACHOMETER GENERATOR MOUNTING BRACKET


PROTECTION CAP
TENSION SPRINGS
ADJUSTING NUT
CIRCLIP
WASHER
SPRING RETAINER
.220" - .250"
CHECK VALVE MANIFOLD BLOCK
OUTRIGGER EXTEND LIMIT SWITCH
OUTRIGGER SHELL
LIMIT SWITCH ACTIVATION BLOCK
OUTRIGGER CYLINDER
OUTRIGGER RETRACT LIMIT SWITCH
LOWER SUPPORT BOLTS (4)
LOWER CYLINDER SUPPORT
OUTRIGGER FOOT PLATE ASSEMBLY

5.3-1 Outrigger Limit Switch Adjustment Procedure

The outrigger option on the SJ68xxE is designed with a floating cylinder. The limit switches are mounted to the outrigger shell and are activated by an aluminum block, which is mounted directly to the outrigger cylinder.

As the outrigger is retracted the footplate assembly comes in contact with the lower cylinder support forcing the outrigger cylinder in a downward motion against the tension springs. This motion enables the activation block to activate the retract limit switch.

As the outrigger is extended and the foot plate assembly comes in contact with the ground it forces the outrigger cylinder in an upward direction enabling the activation block to activate the extend limit switch.

The lower tension springs and adjusting nut must be adjusted to .220”-.250” and the upper tension springs and adjusting nut are used to center the limit switch activation block between the limit switches.

NOTE

To adjust the upper adjusting nut the outrigger must be extended partially so there is no load on it.

To access the lower tension springs and adjusting nut the outrigger must be disassembled. For ease of disassembly it is best to remove the outrigger assembly from the machine. Once the outrigger assembly is removed from the machine follow these steps.

1. Remove protection cap from top of the assembly with a pinwrench.
2. Remove allen head bolts that hold the check valve manifold block to the cylinder.

CAUTION

The manifold block could have hydraulic pressure behind it. Back each bolt out a 1/4 turn at a time.

3. Remove aluminum activation block.
4. Remove upper adjusting nut and four (4) bolts that hold that hold the lower cylinder support.
5. With a hammer and a drift, tap lower cylinder support free of the outrigger shell.
6. As stated above adjust the spring tension of the lower tension springs to .220”-.250”.
7. To reassemble, reverse the above order.

5.3-2 LED Error Codes - Quick Reference Chart

Reading the Codes:
In order to read the fault codes, a sequence of pauses and flashes can be seen on the LED mounted on the GP102 module. The codes are continuously displayed by the LED until the fault is cleared, the GP102 reset and no longer detects the fault, or idle timeout becomes active.

The sequence is as follows:
1. Quarter second flashes followed by quarter second pauses indicate the first digit.

2. A 1.5 second pause.

3. Quarter second flashes followed by quarter second pauses indicate the second digit

4. A 4 second pause. Repeat steps 1-4

Since the GP102 only reports one error, only one code can be read from the LED per instance. If the error is cleared and another error is present, it will then be presented.

5.3-3 LED Error Codes - Code Breakdown Chart

Diagnostic sequence dependant on LED flash code:

No Last Caldate	63
Load Not Calibrated	62
Height Not Calibration	61

An EZcal is required!

Waiting For Neutral	55
Drive/Lift Inputs Faulty!	56
Up/Down Select Inputs Active Together	54
EMS Inputs Faulty!	52

Check inputs on P2 pins 1,2,3,4,5,6,7,8.

P3-4 Short To Supply!	42
P3-4 Short To Supply?	44
P3-6 Short To Supply?	46

Disconnect plug P3. If fault clears there is a problem with the wiring from P3-4 or P3-6 to the rest of the vehicle.

Armguard Active!	23
Elevation Switch Shifted?	21
Elevation Switch Stuck?	22

If the 23 flash code is triggered by armguard, it will occur once then clean. This is not a true fault but just an indication of the reason for the vehicle stop. If the 21 or 22 flash code is triggered by a fault with the elevation switch, it will not clear. Check that the elevation switch correctly opens/closes when the platform is raised/lowered.

P3-4 Short To 0V?	43
P3-6 Short To 0V?	45

Disconnect plug P3. If fault clears there is a wiring fault from P3-4 or P3-6 to the rest of the vehicle.

Invalid Load - Check Sensors	45

Check the voltage out of the pressure transducer, into P4-2. It should be between 0.5V (zero pressure) and 4.5V (maximum pressure) and should vary as the platform load & position varies.

Waiting For B+ on P2-12	52
B+ Supply Too Low	51
P4-1 Or P5-1 Short To 0V?	41

Check that the battery voltage is not too low.
Verify battery voltage on P2-12.
Disconnect plug P4 – if the fault clears there is a wiring fault from P4-1 to the rest of the vehicle.

5.3-4 LED Error Codes - Code Breakdown Chart (Continued)

Vehicle Tilted	11
Vehicle Overloaded	12
Too High - Drive Prevented	14
Too High - Lift Up Prevented	15

These are not true faults but an indication that vehicle movement is prevented. Remove excessive load from the platform. Lower the platform if close to maximum height. Move the vehicle to level ground.

Invalid Height - Check Sensor	65

Check the voltage out of the height transducer, into P4-3. It should be between .4V and 4.6V and should vary as the platform position varies.

Testing HWFS	78
Start Up!	77

These are not true faults unless they do not clear.

Overload Functions Disabled!	66
Factory Override	67

These are not true faults – the GP102 has been configured to suppress overload functionality.

Idle Timeout Active!	Always Off
Fault: Bad Tilt Sensor	71
Fault: Bad HWFS	72
Fault: Bad Slave Analogs	73
Fault: Bad Strain Monitors	74
Fault: Bad Slave Micro	75
Fault HWFS Stalled!	76

Action a function to clear the idle timeout if it occurred. Ensure the GP102 is correctly mounted – incorrect mounting can cause the “bad tilt sensor” diagnostic to occur. Otherwise there may be an internal problem with the GP102.

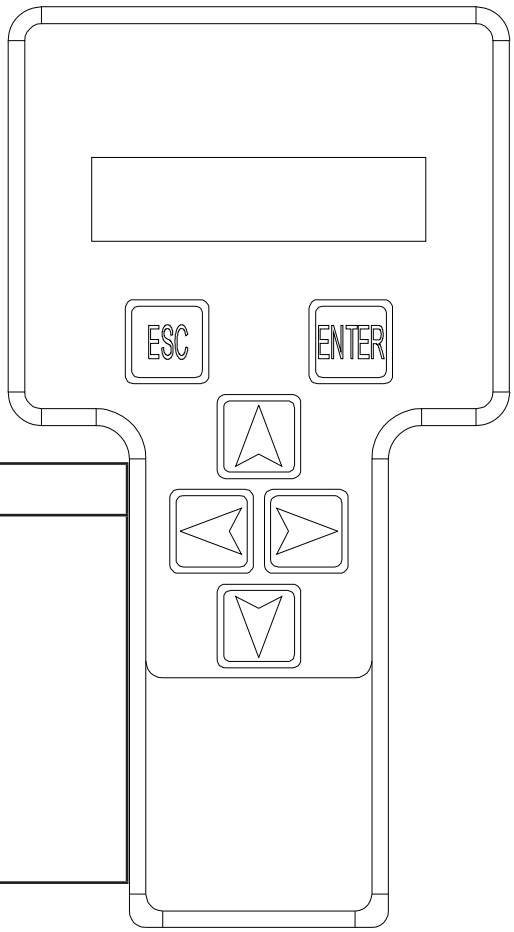
5.3-5 Hand Held Calibration/Diagnostic Tool Key Functions

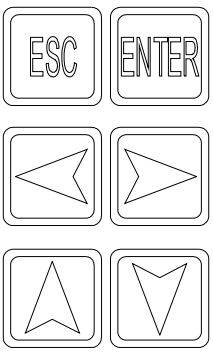
WARNING

Only trained and authorized personnel shall be permitted to service and aerial platform.

WARNING

Read all instructions closely before attempting each phase or the calibration procedure.



Symbol	Key Function
	**ESC/ENTER Buttons** To move back and forth between menu and sub-menu **LEFT/RIGHT Buttons** Select menus and setting to be adjusted **UP?DOWN BUTTONS** Adjust setting values

5.3-6 Control Module Load Calibration - Code Messages & Definitions

During calibration the following failure message may appear:

Code F01: Check HWFS

This message is given if the GP102 startup tests have not completed.

- Check HELP message for more information.

Code F02: Not Ground Mode

This message is given if the machine is not in ground mode (P2-2 must be high).

- Calibration can only be carried out in ground mode.

Code F03: Not Stopped

This message is given if any function switch is closed.

- Check DIAGNOSTICS / SWITCHES to see which function switch is closed.

Code F04: Tilted

This message is given if the machine is tilted.

- Calibration must be carried out with the machine level. If the machine is level, use the SETUPS / TILT SETUPS to set the GP102 level.

Code F05: Bad Height

This message is given if the height sensor output (P4-3) is out of range at the start of calibration.

- The height sensor output must be 3.7V. Check DIAGNOSTICS / SENSORS to see the output. A reading of 0V or 5V is probably due to a wiring problem.

Code F06: Check Elev

This message is given if the elevation switch (P2-10) is closed at the start of calibration, when the operator has confirmed the “PLATFORM DOWN?” question.

- If the platform is down, check the elevation switch wiring.

Code F08: Check Elev

This message is given if the elevation switch (P2-10) is closed at the end of calibration, when the platform should be fully raised.

- This message would occur if the UP switch was accidentally opened near the start of the lift. If the platform is fully raised, check the elevation switch wiring.

Code F09: Bad Height

This message is given if the height sensor output (P4-3) is out of range at the start of calibration.

- The height sensor output must be 3.7V. Check DIAGNOSTICS / SENSORS to see the output.

Code F10: Bad Height

This message is given if the height sensor output (P4-3) is out of range at the end of calibration.

- The height sensor output must be between 0.9V and 4.1V. Check DIAGNOSTICS / SENSORS to see the output. A reading of 0V or 5V is probably due to a wiring problem.

Code F11: Not Up

This message occurs at the start of calibration if the operator selects a function other than UP.

- Select the UP function only.

Code F13: Low Height Range

This message occurs at the end of calibration if the height sensor output did not change sufficiently to give a reasonably accurate platform height estimate.

This message could occur if the UP switch was accidentally opened too early (when the platform is not fully raised). DIAGNOSTICS / SENSORS can be used to check the height sensor output (P4-3). A difference of at least 1V is to be expected.

Code F15: Check Elev

This message is given if the elevation switch (P2-10) is closed when the platform has been fully lowered at the end of calibration.

This message would occur if the DOWN switch was accidentally opened before the platform was fully lowered. If the platform is fully lowered, check the elevation switch.

Code F16: Low Elev.open

This message is given if the elevation switch (P2-10) opened during lift at a too low height (below 5%).

- Check CALIBRATIONS / HEIGHT CALS; the “ElevUp” value shows the recorded height where the switch opened. Set up elevation switch to manufacturers’ specifications and calibrate load.

Code F17: High Elev.open

This message is given if the elevation switch (P2-10) opened during lift at a too high height (above 25%).

- Check CALIBRATIONS / HEIGHT CALS; the “ElevUp” value shows the recorded height where the switch opened. Set up elevation switch to manufacturers’ specifications and calibrate load.

Code F18: Low Elev.close

This message is given if the elevation switch (P2-10) closed during lower at a too low height (below 5%).

- Check CALIBRATIONS / HEIGHT CALS; the “ElevDown” value shows the recorded height where the switch opened. Set up elevation switch to manufacturers’ specifications and calibrate load.

Code F19: High Elev.close

This message is given if the elevation switch (P2-10) closed during lower at a too high height (above 25%).

- Check CALIBRATIONS / HEIGHT CALS; the “ElevUp” value shows the recorded height where the switch opened. Set up elevation switch to manufacturers’ specifications and calibrate load.

Code F20: Height<>0%

This message occurs if the platform height is not 0% after the platform has been fully lowered during either STATIC lift.

The platform must return to the same height each time it is fully lowered.

- Check DIAGNOSTICS / SYSTEM to check the height.

Code F28: Bad Height

This message indicates a problem with the height sensor output (P4-3) during calibration.

The height sensor output must be between 1.0V and 4.0V at all times.

- Check DIAGNOSTICS / SENSORS to see the output. A reading of 0V or 5V is probably due to a wiring problem.

Code F42: Low Pressure

This message indicates that the pressure transducer output (P4-2) is too low (0.5V or less) at the beginning of calibration.

- Check DIAGNOSTICS / SENSORS to read output.

Code F43: High Pressure

This message indicates that the pressure transducer output (P4-2) is too high (4.5V or more) at the beginning of calibration.

- Check DIAGNOSTICS / SENSORS to read output.

Code F44: Low Pressure

This message indicates that the pressure transducer output (P4-2) is too low (0.5V or less) at a measurement point.

- Check DIAGNOSTICS / SENSORS to read output.

Code F45: High Pressure

This message indicates that the pressure transducer output (P4-2) is too high (4.5V or more) at a measurement point.

- Check DIAGNOSTICS / SENSORS to read output.

Code F46: Check Elev

This message indicates that the elevation switch opened more than once during calibration lifting.

Code F47: Check Elev

This message indicates that the elevation switch closed more than once during calibration lower.

Code F48: Bad Pressure

This message indicates that the pressure transducer output (P4-2) is out of range at the beginning of calibration.

- Check DIAGNOSTICS / SENSORS to read output.

Code F52: Too Few

This message indicates that not enough measurements were recorded during calibration lifting or lowering.

Code F98: Out of Range

This message indicates that the “fine tune” calibration is unacceptable.

This is probably due to a faulty transducer or faulty/open holding valve(s)/ emergency lowering valve.

During calibration the following information messages may appear:

Platform Down?

This message is prompting for confirmation that the platform is fully lowered. If necessary the DOWN switch can be activated to lower the platform. Press ENTER to confirm when the platform is fully lowered.

Platform Empty?

This message is prompting for confirmation that the platform is completely empty. Press ENTER to confirm if the platform is empty.

Platform Loaded?

This message is prompting for confirmation that the platform is loaded to rated load Press ENTER to confirm if the platform is loaded.

Please Lift

This message is prompting for the platform to be raised. The UP switch should be closed.

Please Lower

This message is prompting for the platform to be lowered. The DOWN switch should be closed.

Lift Empty

This message is displayed while the platform is being raised to the next measurement height, when an EMPTY platform is being calibrated.

Lift Loaded

This message is displayed while the platform is being raised to the next measurement height, when a LOADED platform is being calibrated.

Lifting

This message is displayed while the platform is being raised, during HEIGHT-only calibration.

Measuring #

This message is displayed when the platform is stopped during calibration, when the GP102 takes a measurement. There will be a short delay while the machine is allowed to stabilize after movement is stopped.

Must Go Down!

This message occurs if the wrong switch is closed when the GP102 is waiting for the platform to be lowered.

Must Go Up!

This message occurs if the wrong switch is closed when the GP102 is waiting for the platform to be raised.

Please Wait

This message indicates that the GP102 is busy; the delay will be short (no more than 5 s).

Lower Empty

This message is displayed while the platform is being lowered to the next measurement height, when an EMPTY platform is being calibrated.

Lower Loaded

This message is displayed while the platform is being lowered to the next measurement height, when an EMPTY platform is being calibrated.

Lowering

This message is displayed while the platform is being lowered, during HEIGHT-only calibration.

Total Data:

This message is displayed at the end of each phase, to confirm the number of measurements recorded by the GP102.

Caldate

This message is prompting for the date to be entered; it is stored to identify when the machine was calibrated.

The last calibrate date can be viewed in DIAGNOSTICS / LOG. Press LEFT & RIGHT to select the flashing digits. Press UP & DOWN to change the flashing digits. Press ENTER when the entry is complete. IMPORTANT: The date 00/00/00 is not allowed!

Finished

This message confirms that calibration is complete and successful.

5.3-7 Control Module Load Calibration Procedure

1. Move the aerial platform to a test area where the platform can be elevated to its maximum working height and reach.

2. Ensure the aerial platform is parked on a firm, level surface.

IMPORTANT

Each phase must be completed before the next phase can be carried out.

All phases must be completed before the aerial platform can be operated.

IMPORTANT

Always follow the instructions of the Calibration instrument.

IMPORTANT

Make sure the aerial platform is on BASE mode.

NOTE

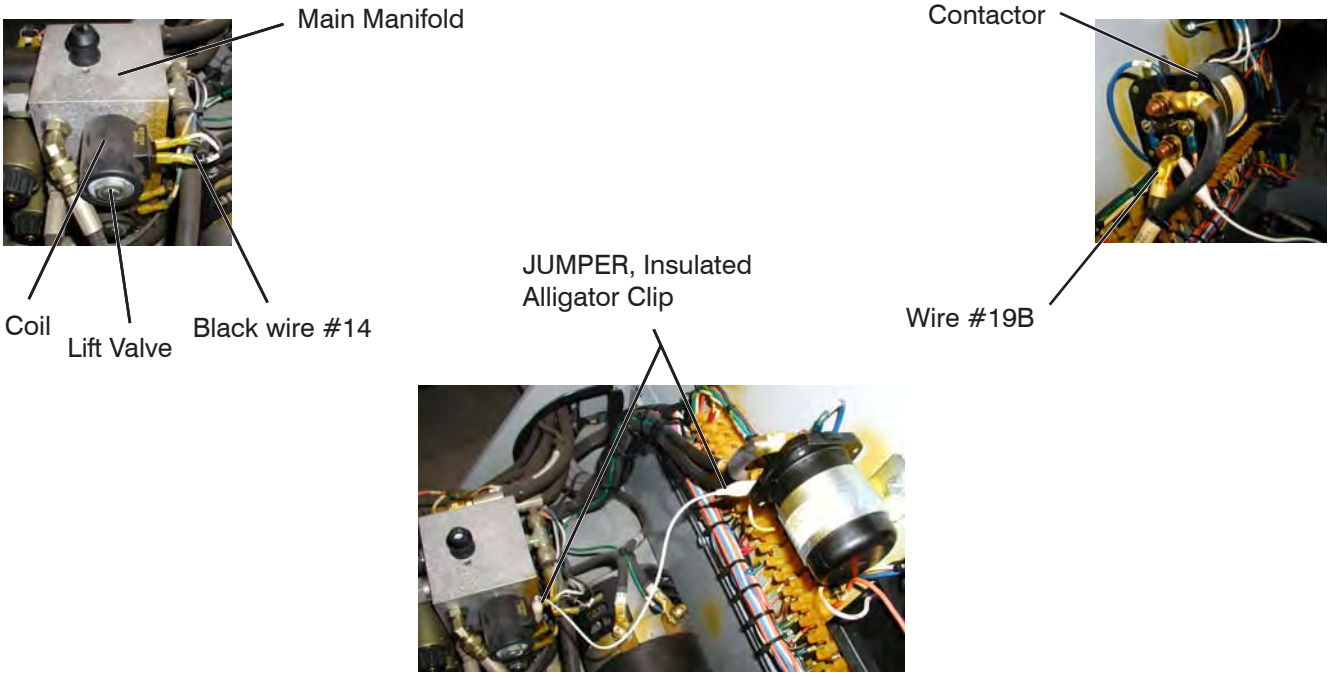
To ensure a good and clear contact, clean the wire terminals before attaching the jumper clip.

3. Locate the main manifold inside the hydraulic/electric tray.

4. Disconnect the black wire #14 from the lift coil.

5. Locate the contactor on the electrical panel assembly.

6. The jumper connection must be connected between the contractor (wire #19B) and the lift coil (instead of the black wire #14)



7. Connect the Easy-Cal tool to the P1 connector on the CONTROL MODULE.

8. The display will show "**Help: Press Enter**".
   By using Left/Right buttons, select the "Access Level (?)" from the menu and press the **ENTER** button.

   Contact Skyjack Service Department at:
   (44) 1691-676 236 for your Access Level Code Number.

9. The display will show "**Access Level Code (xxxx)**".
   By using the Up/Down buttons, enter the Access Level Code (xxxx) followed by pressing the **ENTER** button.

10. The display will show "**Access Level 2**".
    By using Left/Right buttons, select the "Setups" from the menu and press the **ENTER** button.

11. The display will show "**Machine Defaults**".
    Select the "Machine Defaults" from the menu and press the **ENTER** button.

12. The display will show "**Defaults, 0 = Custom**".
    By using Left/Right buttons, select the "**X = Group Code**" from the menu and press the **ENTER** button.

13. The display will show "**X=GROUP CODE**". (Refer to 5.3-8 for group code)
    By using the Up/Down buttons, enter the "Group Code (?)" then by using Left/Right buttons, select the "**Curve**" from the menu.

14. The display will show "**X=CURVE**". (Refer to 5.3-8 for curve code)
    By using the Up/Down buttons, enter the "Curve Code (?)" followed by pressing the **ESCAPE** button.

15. The display will show "**Machine Defaults**".
    By using Left/Right buttons, select the "Tilt Setups" from the menu and press the **ENTER** button.

16. The display will show "**Tilt Setups: Calibrate Level**".
    Select the "**Tilt Setups: Calibrate Level**" from the menu and press the **ENTER** button.

17. The display will show "**Calibrate Level: Yes: Enter, No: ESC**".
    Select the "Yes" from the menu by press the **ENTER** button.

18. The display will show "**Calibrate Level: Tilt 0.0' , 0.0'**".
    Select the "**ESCAPE**" from the menu once.

19. The display will show "**Tilt Setups Calibrate Level**".
    Select the "**ESCAPE**" from the menu once again.

20. The display will show "**Setups Tilt Setups**".
    By using Left/Right buttons, select the "Load Setups" from the menu and press the **ENTER** button.

21. The display will show "**Load Setups: Calibrate Load**".
    Select the "**Load Setups: Calibrate Load**" from the menu and press the **ENTER** button.

22. The display will show "**Calibrate Load: Platform Down?**".
    Asking for confirmation that the platform is fully lowered?
    Check that the platform is fully lowered then press the **ENTER** button to confirm.

23. The display will show "**Calibrate: Loaded Empty? No**".
    Asking for confirmation that the platform is empty?
    Check that the platform is empty

24. By using the Up/Down buttons, enter the “Yes” followed by pressing the **ENTER** button.

25. The display will show “**Calibrate Load: Please Lift.....**”.
Waiting for the lift switch to be activated.

26. Hold the lift switch and keep holding it until the platform is fully elevated.

IMPORTANT

If the lift switch is released earlier than full-height position, the calibration will have to be aborted and repeated from the beginning!

27. When the system detects the lift switch closed, the display will show “**Calibrate Load: Lift Empty**”.

28. After a delay, the system will stop the platform lifting and will take height & pressure measurements; the display will show “**MEASURING # xx**” When the measurements have been taken, the platform will resume lifting.

NOTE

The Lifting.....stopping.....measuring....lifting process will continue until the platform reaches full height.

29. When the platform reaches full height release the lift switch.

30. The display will briefly show “**TOTAL DATA: 04**” to indicate the number of measurements taken.

31. The display will show “**Calibrate Load: Please Lower.....**”.

IMPORTANT

If the lower switch is released earlier than full-lower position, the calibration will have to be aborted and repeated from the beginning!

32. Hold the lower switch and keep holding it until the platform is fully lowered.

33. When the system detects the lower switch closed, the display will show “**Calibrate Load: Lower Empty**”

34. After a delay, the system will stop the platform lowering and will take height & pressure measurements; the. display will show “**MEASURING #xx**”. When the measurements have been taken, the platform will resume lowering.

NOTE

The lowering.....stopping.....measuring....lowering process will continue until the platform is fully lowered.

35. When the platform is fully lowered, release the lower switch.

36. The display will show briefly “**TOTAL DATA: 04**” to indicate the number of measurements taken.

37. The display will show “**Calibrate Load: Caldate: mm/dd/yy**”.
It is recommended that the current date be entered here to provide easy taking of the data of last calibration.
The current date must be entered using the **LEFT/RIGHT** and **UP/DOWN** buttons.
38. Press ENTER to complete date entry (the system will store it). Display will show “**FINISHED**”.

39. Remove the jumper wire and re-connect the black wire #14 to the coil removed earlier.

40. Close the hydraulic/electric tray.

NOTE

Continuing partially complete load calibration.

If the phase does not need to be repeated, just press **ENTER** to move on.
If the phase does need to be repeated, press **UP** or **DOWN** to change "**NO**" to "**YES**" then press **ENTER**.

5.3-8 Curve/Group Codes Chart

AB

Model	Number of Extension Platforms	Curve Code	Group Code
6832E	1 Manual Extension Platform	22	21
6832E	1 Powered Extension Platform	23	21

60404AF_SJ3B

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